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CITY PLANNING FOR NEWARK



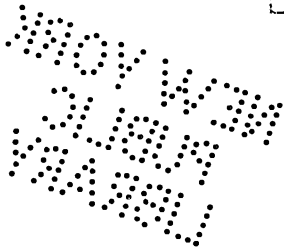
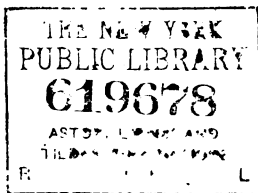
THE CITY PLAN COMMISSION
NEWARK, NEW JERSEY



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NEWARK, N. J.
L. J. HARDHAM PRINTING COMPANY
1913

7.



OFFICE OF THE CITY PLAN COMMISSION

NEWARK, NEW JERSEY, December 31, 1913.

*To the Honorable, the Mayor and Common Council of the
City of Newark, N. J.*

GENTLEMEN :

We hand you herewith a summary of the work of this body since its appointment by you, two and half years ago, June 1, 1911. In this summary we have included a few of the many facts we have caused to be gathered concerning Newark's present condition, all the recommendations we have made in the several reports heretofore submitted to you, and a few suggestions not previously presented.

To these we have added, with a view to future work, a brief outline of some of the more important of those aspects of city planning which we have not yet taken up at all or have considered only briefly.

The index covers the contents of this volume, and indexes in considerable detail also all of the reports that we have compiled, whether they have been printed or not. We have thus made this report a key to the greater part of the city planning material which we have gathered.

We have found the work which seemed to fall within the city plan commission's duties of the keenest interest. Our requests for information, suggestions and co-operation made to citizens, civic bodies, private corporations and all departments of the city government have met with hearty response.

Our recommendations have everywhere been courteously received and we believe have helped to increase the sum total of intelligent interest on the part of our fellow citizens concerning the future of our city.

We hope this volume will prove a useful handbook for all private citizens and public officials who wish to know their city, wish to see it grow in efficiency and beauty and are willing to work for its improvement.

Respectfully submitted,

DAVID GROTTA, *President.*

AUSTEN H. MCGREGOR, *Vice-President.*

FREDERICK J. KEER, *Treasurer.*

JOHN COTTON DANA.

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Secretary.

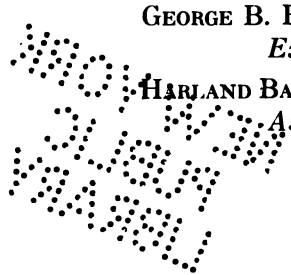
E. P. GOODRICH,

GEORGE B. FORD,

Expert Advisers.

HARLAND BARTHOLOMEW,

Assistant Engineer.



SUMMARY

A brief review of the contents of this volume is here given for ready reference and for the use of those whose time will not permit a careful perusal of the entire book.

The Introduction gives facts and figures which tell why Newark is a good place in which to live and do business.

Business and residential districts of the city are noted, as are also sewer system, water supply, death rate, wages for skilled and unskilled labor, rents of homes for all classes, prices of land for business and residential purposes, prices of water, gas and electricity, and the fact that many great railroads cross the city. It calls attention to Newark's good government, schools, churches, public and private hospitals, benevolent institutions, recreational facilities and financial institutions.

Chapter I. contains a brief statement of the functions of a good city plan. Many suggestions for improvements in the street system are shown by maps, with brief notes on why each change is needed, what it would accomplish and how much it would cost.

It shows how these improvements could all be completed within ten years under existing laws. The principles of excess condemnation are discussed.

Chapter II. is devoted to municipal decoration. The more important street intersections, public plazas and approaches to the city are pointed out and suggestions are made for an attractive architectural treatment of each.

Among those discussed are: Broad and Bridge Street Intersection, Military Park Rearrangement, Ironbound Plaza on Market Street and Clinton Avenue Plaza at Elizabeth Avenue.

Chapter III. treats of the width and arrangement of streets. The problems due to increasing demands of

traffic are discussed. The many functions of a street are described, as well as their several types.

Examples of how other cities are meeting street problems are cited. The zone system is described.

Newark's principal thoroughfares are held up to view and suggestions offered which would make them individually more efficient and, collectively, a great and unified system.

Chapter IV. is on harbor development. The advantages of the New Jersey shore are compared with those of New York.

A Commission, armed with State authority, is recommended, which would have jurisdiction over all development in communities which border on Newark Bay. Other recommendations include the removal of obstructions at the entrance to the bay and the removal or improvement of the Central Railroad bridge.

Local development is discussed, and suggestions are made for procedure if this method is to be followed exclusively.

Figures are given which show the extent of Newark's commercial and industrial activities. Examples of industrial foresight in foreign cities are shown. Federal improvements of Newark's waterways are described.

Chapter V. restates the opinion of this Commission that the present Centre Market should be abolished, that a wholesale market should be established near the freight yards at South Broad Street and that certain local retail markets should be established. Only in this manner will Newark's food supply be systematically and economically handled.

Chapter VI. reviews the trolley transportation problem. A description of the study made by this Commission is given. The new terminal scheme is described and the city's duty is shown, in that all studies point to the same conclusion—that the only complete solution of

trolley congestion lies in the opening and widening of certain streets in the central part of the city, and this the city alone can do.

Chapter VII. is a review of the Morris Canal situation. The construction, uses, property titles and legislative considerations are given in as much detail as space allows.

The problem is one of State-wide scope. The local aspect of the canal situation is described, as is also a plan for abandonment.

Chapter VIII. is devoted to municipal recreation. The attendance and features of playgrounds are given in tabular form and otherwise.

A department of municipal recreation is recommended, and the acquisition of new playgrounds.

Chapter IX. contains a review of all which has been accomplished by this Commission in its two and a half years of existence.

Each of the published reports is reviewed and a list of the same is given at the conclusion of the chapter.

Chapter X. tells of the many branches of work as yet untouched or unfinished, some of which this Commission will take up during the ensuing year.

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(*Harland Bartholomew*)

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(W. B. Morningstern)

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NEWARK'S ADVANTAGES

A book on city planning suggests improvements. To suggest improvement is to say something is wrong which improvements can make right. So this volume, full of suggested improvements, points at a good many faults in Newark.

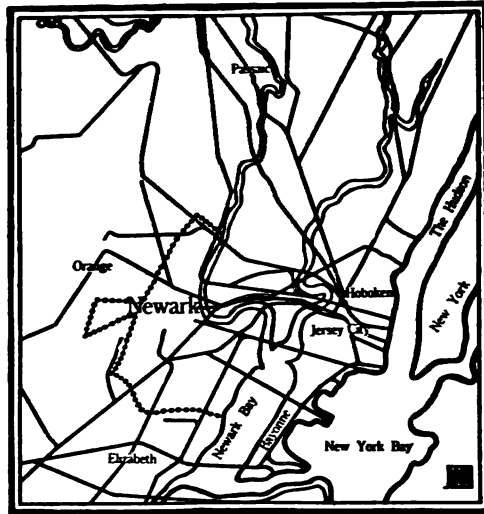
This commission does not like to give a wrong impression of our great city. So we put into this introduction some of the facts which help to make Newark a good place in which to live and do business.

I.

Excellently Situated

Newark extends for six miles north and south along a high ridge which rises a little west of the Passaic River and Newark Bay. The city covers the ridge and flows down into and across the hollow beyond it on the west, and out upon the low-lying plain between it and bay and river on the east. The summit of the ridge looks eastward beyond the Hudson to the giant buildings of Manhattan, nine miles away, and westward four miles to the Orange Mountains.

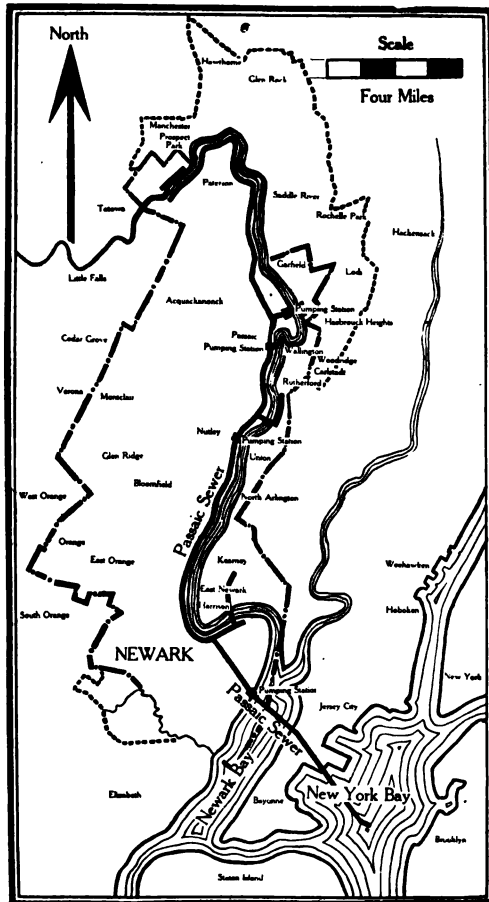
Newark is thus set on a hill. The greater part of all its people have their homes well up from tidal river and bay and the salt marsh lands which border the latter. The town is for the most part high and well-drained. A complete sewer system and a well-nigh perfect and most ample water supply help to make the good location still more healthful. The death rate last year, 14.34, is bettered by few large cities and shows that in the advantages just noted must be included efficiency in health administration.



Shows Newark's strategic position for manufacturing and commerce. Note how it is crossed or closely approached by nearly all the great railway systems of the United States just as they reach the Port of New York. From the *Newarker* for November, 1911.

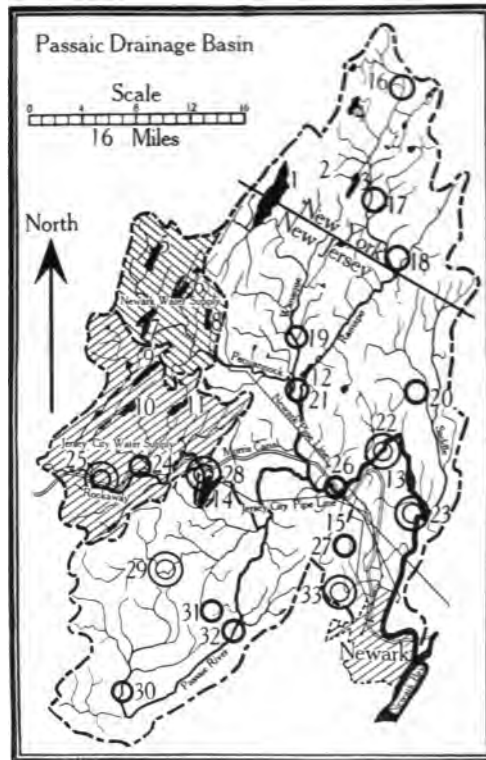
The houses of most of the more prosperous are on the ridge, at its northern and southern ends. A few of the older homes are down in the old city, on the plain, where the original settlers in 1666 laid out the Broad and the Market streets, so common in their day, and marked their crossing as the city's center for all time. On the slopes of the ridge also, and on the plain to the east, are sections taken over as their own special quarters by Germans, Italians, Poles, Russians, Hungarians and others of our later settlers. New York commuters are beyond the hollow on the west and at the northern and southern ends of the ridge.

Factories and workshops have also found proper sites on the hill, though most of them stand on the lower land,



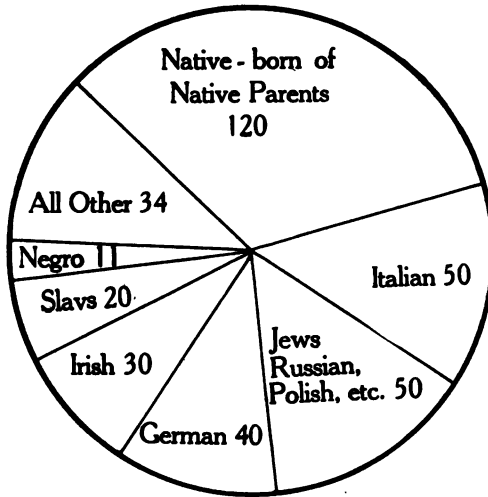
Shows the trunk sewer running from Paterson, N. J. to Robbin's Reef, N. Y., 26 miles. Work has begun on this great interurban enterprise and is being rapidly pushed forward. The sewer when complete will purify the Passaic River and Newark Bay and make still more attractive the homes in all the vast region which it drains. From the *Newarker* of July, 1912.

near the city's center, and to the east and southeast near the river and marshes.



Shows the source of Newark's water supply, 21,267.71 acres owned by the city and all guarded with extreme care. The water coming from it is very pure and abundant. From the *Newarker* for March, 1912.

The town has grown since 1830 from an ancient, quiet place of 11,000 people, where a few factories disturbed but little the serenity born of 160 years of moderate growth, into a distinctly industrial city of the modern type. For nearly seventy of the eighty-four years of growth, since 1830, the town's development was quite unguided. Factories and tenements jostled the old homes. New comers settled singly or in groups by nationalities where they



Showing the elements of Newark's population. The figures are in thousands. Though published in the *Newarker* two years ago they are quite accurate for to-day. More than two-thirds of the people of the city are foreigners. More than half of these foreigners are Italians, Jews and Germans.

would. Hence we have a city which startles many newcomers by its seeming discordant mingling of fine homes and uninviting tenements and factories. But a more careful look shows that this mingling of home and business is not as distressing as it may seem at first, and is not without its advantages. Moreover, as the very existence of this book shows, the unguided growth of former years is now to be guided, to the advantage of all and to the betterment of the city's aspect.

II.

Homes and Savings

The workingman can rent in a tenement fairly good quarters for housekeeping for from \$10 to \$14 per month.

Laws regulating tenements are better than in most states, and are quite well enforced.*

A flat in a two-family house can be had for from \$18 to \$40 per month.**

The trolley system, in spite of some congestion and delay at the city's center, is so efficient that a worker in almost any factory can reach a section where he can find a home within his means for five cents and in from ten to thirty minutes.

Thousands own their own homes. The 210 local building and loan associations hold nearly \$40,000,000 of assets for 72,000 shareholders. The house owner of moderate means must usually travel a little further to his place of business than the man in the tenement or flat. But within twenty to thirty minutes of the business center he can find a lot, 25x100 feet, for from \$300 to \$1,000 and can build on it a modern, six-room frame house, with bath, electricity and gas for from \$2,000 to \$4,500.* * *

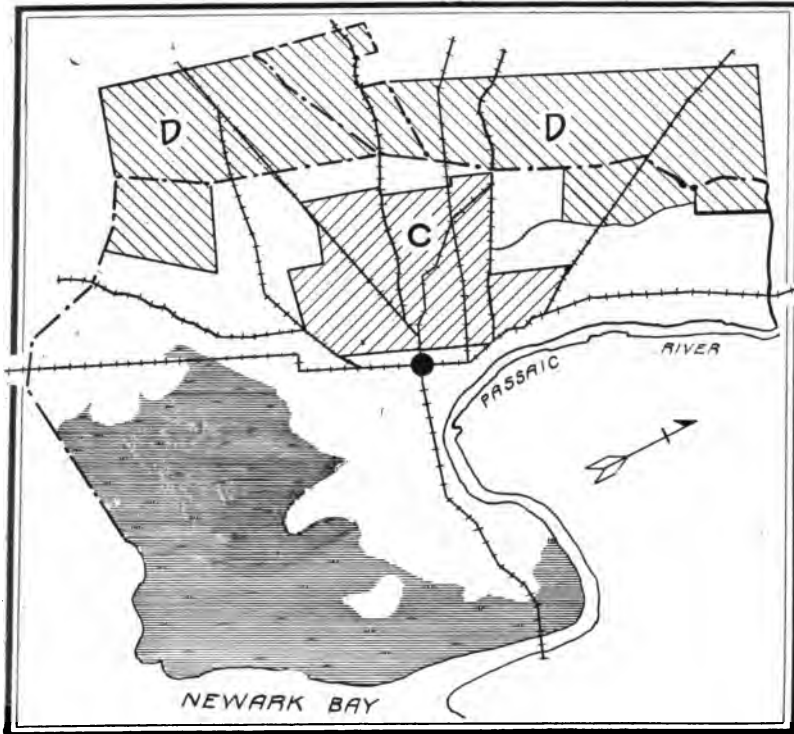
In the savings banks 127,000 depositors have \$43,000,000 of savings, an average of about \$341 each. National banks and trust companies are used by 10,000 firms and 77,000 families, and hold over \$84,000,000.

Food prices are up to the average of eastern cities. Clothing, household goods and general merchandise are sold on a narrow margin, as they must be in any city as well supplied as is Newark with huge and progressive department stores.

*Laborer's Rent:—We have some of the older fashioned tenement houses where four and even five rooms may be had for \$9.00, while in some of our modern six-family tenements as high as \$15 is paid; but these latter houses are surprisingly convenient and comfortable.

**Flat Rentals:—The lower rent quoted is obtained in houses where there is no heat, etc., the higher rental prevails in flats favorably situated, and where practically every known improvement is installed.

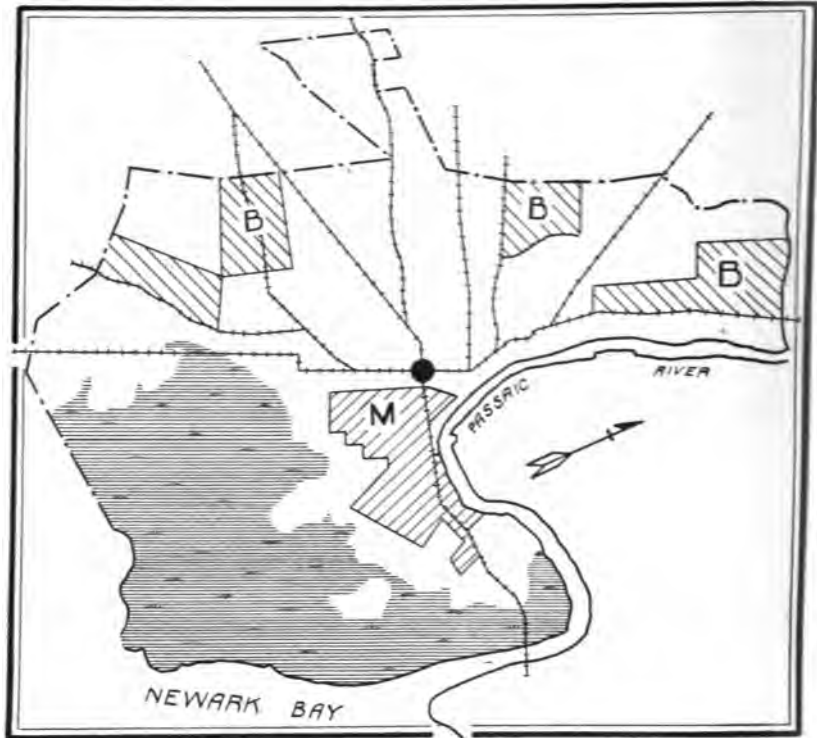
***Land Values and Building Costs as stated, can be readily verified.



C indicates congested residential area close to the business and traffic centre (the black spot).

D D is the large region to the northwest, west and southwest, lying partly in and partly outside the city limits, available for homes of moderate cost. It is nearly all high and well drained, and traversed, as shown by trolley lines. Only a very small part of this large suburban area is as yet built up.

The one hundred and sixty years of rather slow and peaceful growth up to 1830 gave the city a certain stability, a certain habit in sound business methods, which seems still to retain its hold. Newark-made goods have everywhere a good name. Business conservatism still prevails;



M marks Newark's region of homes of people of moderate incomes; while B B B mark regions of expensive and high grade residences.

but is now coupled with a very manifest civic progressive-ness. Serious strikes are almost unknown, and while labor organizations are not indifferent, they seem to come rather easily to reasonable arrangements with employers.

III.

Manufacturing Figures

Factory sites are abundant and not expensive. Lots not far from freight yards, or near the twenty foot chan-

nel of the Passaic which is used by tugs, tows, and schooners, and within ten to twenty minutes by trolley of homes within workmen's means, cost from \$250 upwards per thousand square feet.*

Lofts for factory purposes quite near the city's center cost from \$200 to \$700 per thousand square feet.**

Wages for day labor are from \$1.65 to \$2.25. Laborers are paid by the month \$45, though most are hired by the day. Skilled mechanics get from \$2.75 to \$6.00 per day. The minimum wage for women employed by the corporation which controls the gas, electricity and trolleys of nearly all north Jersey is now \$9.00 per week. Women clerks in the Prudential Insurance Company begin at \$7.00 per week, and in some factories at a higher figure.

Land, building, rent and wages are all, in general, perhaps a little less than they are in New York City.

Industries are very varied, and are exceeded in extent by only ten other American cities, though in population Newark is the fourteenth in order. It is not difficult here to get and hold steady skilled workmen.

Water for domestic purposes is supplied by meter or at a flat rate and is consumed at the rate of 41,000 gallons per capita per year. Metered water for manufacturing costs \$1.03 per thousand cubic feet, subject

*Factory Sites:—The explanation of the apparently wide margin of prices in this case is that low figures apply to outlying acreage, and reclaimed meadow land, all, however, being within the city limits, and near to conveniences—higher priced land means ordinary city lots in streets containing all improvements, and suitable for other occupancy. Strictly speaking, Newark has no exclusively manufacturing district.

**Lofts:—The different rentals here mentioned cover, generally speaking, lofts old and new, and with and without power; location and type of construction, also being important factors.



Newark factories; their location. The dots represent single factories. The numbers inside the sub-divisions are the numbers of factories in those areas. Total number indicated, 2,000. Note that factories are near the centre of the city, as is natural in an industrial town. It is evident from their location that railroads are thought to be of more importance than water transportation. From the *Newarker* of December, 1911.

to discount of 2% on quantities exceeding 100,000 cubic feet.

Electricity for lighting is from 10c to 3c per k. w. hour, according to quantity. For power the rate varies according to connected load and hours used.

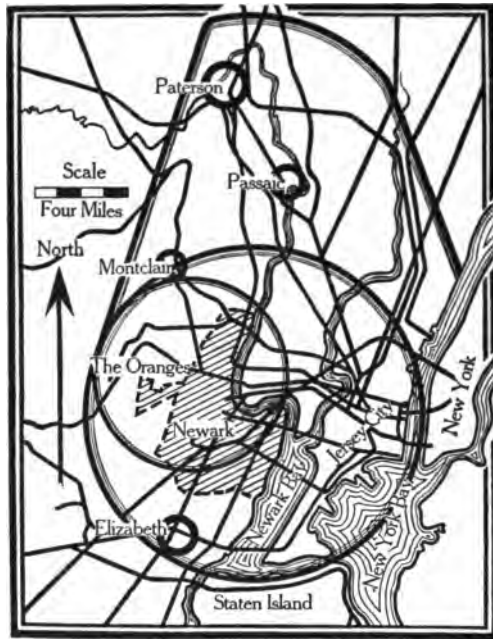
Gas for lighting homes or for heating or washing is 90c per thousand; for industrial use from 55c to 90c, according to quantity.

Compare these conditions and these prices with those in other manufacturing cities, and then set also to the credit of Newark these facts, that it has water transportation to the center of the world's commerce in New York Harbor nine miles away, that it is crossed by five trunk line railroads and their connections—with many miles of freight yard sidings—which are in effect eastern terminals of all the railroads of the country save the New York Central and the New England system, and that it is within seven miles of one of the world's greatest supplies of labor and raw material, and of the greatest purchaser of manufactured products, and it is plain that Newark, though capable of improvement, is a city of advantages for home and business.

IV.

A Progressive City

More may be said. Newark has always been quite well governed; perhaps a little too conservatively in former days, but never with any gross extravagance, or malfeasance. The same ancient habit of serenity already alluded to, touched with old fashioned morality, which has kept the city peaceable and honest in its growth from 11,000 in 1830 to 400,000 in 1914—an average of forty per cent in every decade,—has retarded improvement in some lines. The modern city improvement movement has also been delayed in its action here by two facts, one the large number of New York commuters who sleep in Newark, but think only in terms of the city of their business; the other, the pull upon the time and attention of men doing business in Newark of the great metropolis which is always in sight across the meadows and is always making enticing appeals to the attention. That the city improvement spirit now prevails here is evidenced by the existence



Newark is shown in the space crossed by diagonal lines. Population, 400,000. Railroads are shown by black lines. The small circle takes in several suburban towns and has a population of 590,000. The larger circle has an area of 130 square miles, the same as Philadelphia, and a population of 1,300,000. The area included in the circle and the line extending north is 200 square miles and has a population of 1,700,000. From the *Newarker* for January, 1912.

of this Commission and the publication of this report, and still more by the swift changes for the better taking place in the city's general aspect.

Property is assessed for taxation at nearly its full value and the tax rate is not excessive, slightly over two per cent.

Much beer is made here; but in number of saloons, 1386, and arrests for drunkenness and for all other causes,

Newark has a very good record among cities of its class. In the homicide record of the first decade of the twentieth century, compiled by the Spectator, Newark and Rochester, N. Y., were coupled as standing next in point of excellence in this respect to Milwaukee, the best city in the U. S.

V.

Schools and General Welfare

In the last decade Newark has discovered that she is herself no mean city, and has learned to look upon herself with respect and to wait upon her own needs.

For education, more is spent here per capita than in almost any city in the land. Young people crowd the day schools to the doors. Much highly skilled labor is here employed, so it is not surprising that relatively more boys work hard through the winter in the evening schools than in other of our great manufacturing centers.

Churches are almost too abundant. They are active in social and educational work. Hospitals, asylums, homes, special aid and public welfare organizations are abundant, well supported and are now learning to work well together under a very efficient bureau of associated charities.

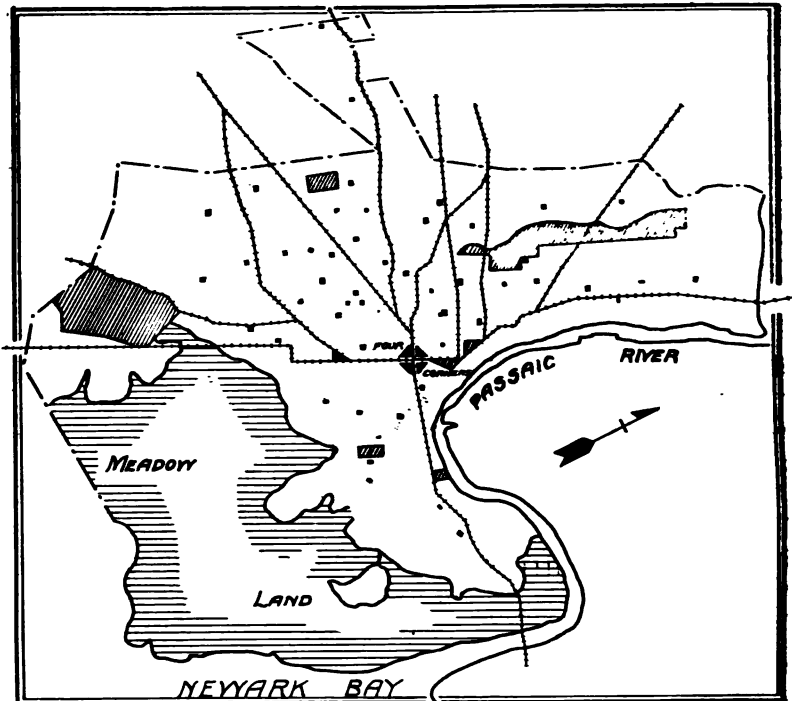
It would be difficult to name a movement for social betterment of any kind that has not here found some of its earliest advocates and supporters—summer schools, all-the-year-schools, evening schools, trade schools, boy's homes, baby's hospitals, certified milk, and anti-tuberculosis crusade.

The city, indeed, has never been backward in mutual aid, in promotion of the welfare of the young, the sick and the helpless.

It has rather notably failed in care of its personal appearance, and in secondary and higher education and in attention to the suppression of certain general ills like

the impurities of its river (it vainly sought legislation against this twenty years ago), the multitude of its mosquitoes (in the suppression of this nuisance it is a pioneer in the United States), and the inconveniences of its main business streets.

But while it is true that it has been rather notably lacking in attention to these matters, it can scarcely be said that it is not giving them due attention now. In the last few years the streets have been kept remarkably clean,



Shows how large a part of the city's area is unoccupied swamp or meadow; how numerous and well scattered are the Parks (indicated by diagonal ruling); the distribution of school houses (shown by black squares), and the main line of the trolley system. This last is to be greatly improved as soon as extensions planned can be carried out.

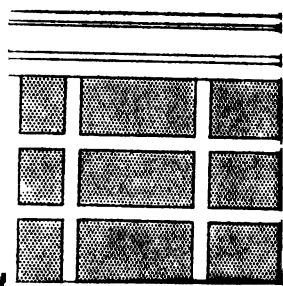
especially in view of the very large per cent. of foreign born residents who, quite naturally are so taken with the delights and advantages of a democracy that they do not learn easily to bear their share of its responsibilities. Three high schools have just been built, in as many years, with several grade schools, all of the latest and best type. A plan for a City University is receiving serious attention and can scarcely delay realization for long.

A vast sewer system, inter-city in scope, will soon purify the river, and the mosquitoes are now under a systematic attack.

Perhaps enough has been said to show that Newark is worthy to be the home of any man and can furnish a proper setting for the largest enterprise. If the visitor will not judge it from the car window as he rushes through; but will drive about it for an hour, he will find that in spite of the fact that its two thousand industrial enterprises (there are 6,000 manufacturing plants recorded, but many are of course small), dominate much of the civic landscape, as they must and should, it has all the miles of streets, of homes, the many parks,* the boulevards, the thousands of shade trees, and the public buildings, which a rich city in America is entitled to. Perhaps to the prospective dweller here the most important and not least manifest traits are those which mark Newark as a rather quiet, rather conservative and very prosperous town.

*Of the cost of a very wonderful county park system the city pays three-fourths.





CHAPTER I.

SUGGESTED IMPROVEMENTS IN THE CITY PLAN.

Functions of City Planning.

The rapid, consistent and apparently long-to-be-continued growth of large American cities has now made city planning of as much importance here as it has been in Europe for some time. The development of our communities must be carefully guided if in the future city there is to be a wholesome condition free from the errors of the past. It is city planning, above all things, which will prevent defective growth and remove the bad effects of past errors.

The greatest influence on the character of every city is its street system, representing as it does from 25% to 40% of the total area. It behooves each municipality to mould its streets into a simple and efficient structure if they are to fulfill successfully their part in the development of a greater city.

There are two important things in the growth of a city which it is the part of a city plan to watch and guide:

- (1) Adjustment of inadequate existing conditions to meet present and future requirements, and
- (2) The proper guidance of new growth to harmonize with the older parts of the community.

The recent and unprecedented growth of our large cities was not expected when they were laid out, and business districts have naturally far outgrown the limits to which they were originally confined. Again, business of to-day is far different from that of years gone by, so that large buildings, wider streets and better pavements have become necessities. The encroachments of business upon territory already developed has necessitated the expenditure of large sums of money to widen and extend

old streets, and to create new ones; and it is the duty of a city plan so to direct this expansion as to obtain the best and most far-reaching results in the most economical manner.

With increase of population, residential districts usually expand in greater proportion than do those devoted to business; but this expansion is usually confined to outlying undeveloped areas, and when such is the case it is the function of a city plan so to direct this growth that the new community is not a separate unit, but a part of one large comprehensive scheme. In this type of development it is not as costly or as difficult to accomplish proper results as in the expansion of business districts.

A large city oftentimes grows and absorbs small communities which had previously been developed irrespective of other than local conditions. In such cases it is for city planning so to re-arrange, if necessary, streets of the old communities as to make them parts of the scheme being followed for the enlarged city, and not natural barriers between those sections of the city which lie on either side of them.

It is impossible to lay out an ideal street system, for each city has its own individuality, due to its topographic details, character of business, type of population, etc. One universal need, however, is that of good crosstown thoroughfares, with radials running from the approximate center of the city to suburban districts. Newark is particularly fortunate in this respect, and needs but little improvement to develop a street system comparable with the best in other American cities.

As has been said, improvements within business districts are usually expensive. The longer they are delayed the more costly they become, and undue delay means stunted growth.

The good city plan is one which tells how, when, and where street improvements can most profitably be made.

A city without a plan has been compared to an organization without a head. Promiscuous development results in chaos. The proper administration of cities is as much of a scientific procedure as is that of directing the affairs of a large business institution, for a city is just as much of a unit as is a business concern. The successful city is one wherein the street system is a unit. Lack of continuity in the street system leads to great loss of time in carrying passengers and in transporting goods.

There follow a series of maps illustrating improvements in our street system, each of which is required for the development of a "Better Newark". Accompanying each map is a short note which tells why the change suggested is needed, what it would accomplish, and suggests how it would save time and money to every manufacturer who transports goods over the streets of that part of the city, to every citizen who rides in the trolley cars, and, in fact, to all who use the streets of the city in any way.

At the end of the chapter is a plan whereby all of these improvements can be systematically financed under existing laws.

Front Street.*

There is serious need of better street facilities along the Passaic River front, especially from the Pennsylvania Railroad to the Clay Street bridge. River Street, Front Street and Ogden Street would, if straightened and widened, serve traffic demands well for some time. At present these three streets are taxed to their fullest capacity with vehicular traffic, which steadily increases and will increase more rapidly if the commerce of the river grows by reason of the development of Newark Bay.

The accompanying map illustrates probably the worst portion of Front Street and a suggested plan for its straightening. The property values in the locality are not very high, and a reasonable expenditure here seems warranted by the fact that this is the only commercial thoroughfare connecting the large manufacturing district in the eastern section of the city with the north end. The assessed valuation of property affected by the improvement is about \$100,000. \$250,000 would cover the cost of condemnation, opening the street, paving, etc.

Were excess condemnation possible, the map shows that a large percentage of the cost of this improvement could be recovered by the purchase by the city of mutilated property and the disposal of unused portions after the improvement was completed.

* Proceedings have recently been initiated by the Board of Street and Water Commissioners for the completion of this improvement.

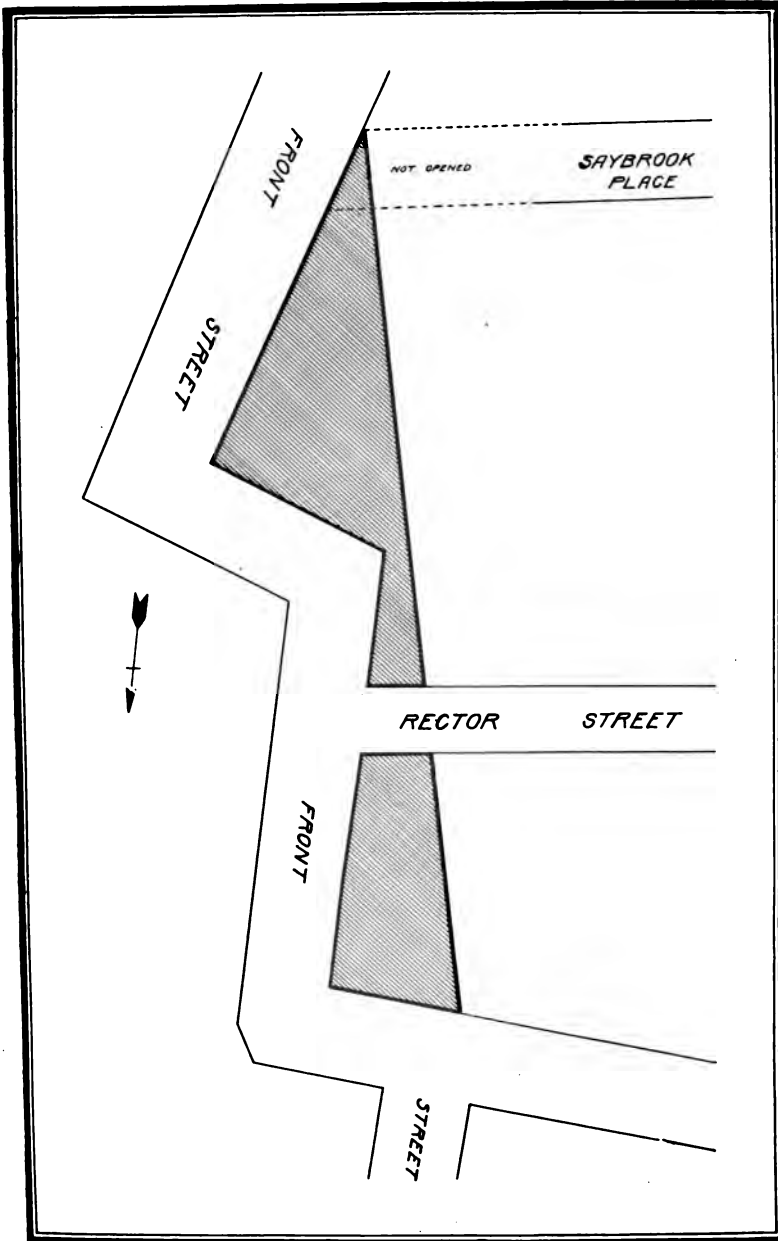


PLATE I.
Proposed Straightening of Front Street at Rector Street

Diagonal Street.

This extends from the intersection of Broad Street and Central Avenue to the Pennsylvania Railroad Depot on Market Street, and is one of the most urgent of all improvements. It would accomplish things for which Newark has long been striving. First and foremost, it would help solve the street car problem as no other single improvement could. Cars from the north could reach their destination without approaching the now congested "Four Corners", and great relief would there be given.

It would furnish another much-needed east and west thoroughfare by Market and Diagonal Streets and Central Avenue. This would serve both vehicles and trolleys. It would give direct communication between the "Iron-bound" district and the north end of town, and immediate access to the former by all pedestrians entering Newark by the McAdoo Tubes.

It would open a new business thoroughfare, and would increase both the immediate and adjacent property values by giving a natural incentive for expansion to the business section of the city. Newark is growing rapidly, thirty per cent. every ten years. The business district has so concentrated itself about the intersection of Broad and Market Streets and the immediate vicinity, that unless new streets are opened to permit a natural growth to take place, it will suffer in many ways from over-concentration. The opening of Diagonal Street would affect property values over the whole section bounded by Diagonal, Market and Broad Streets.

The assessed valuation of real estate to be condemned for cutting this street is about \$725,000. It would cost about \$2,500,000 to condemn this property and open the street. This may seem a stupendous amount; yet New York, Pittsburgh and Rio de Janeiro have all within the

past ten years undertaken and completed street openings many times more costly than this.

While \$2,500,000 to open the street would be the initial cost, the burden of which would fall upon the city, it is safe to say that within twenty years the improvement would fully pay for itself in increased taxable properties, and in time saved to traffic of all kinds.

Counts have been made with great care by this Commission to determine precisely the amount of each kind of traffic which would use Diagonal Street each day at the present time, with results as follows:

Vehicles	1,216
Trolley Cars.....	618
Pedestrians	700

Computing the value of time and distance saved, wear and tear, etc., for all traffic for one year, we get an amount equal to the interest upon an investment of \$1,500,000. In other words, this improvement would pay for itself in thirty years by the mere saving in time, etc., to the community at large, irrespective of increased property values.

Again, in the immediate vicinity, within 500 feet of Diagonal Street, there is property, amounting to \$6,000,000 in assessed valuation, which, if increased ten per cent. in taxable value, would in a few years completely recompense the city for the initial expenditure.

Little, if any, objection can be made to this improvement by one who carefully considers its present and future value to the whole city.



PLATE III.

MARKET STREET.—Shows character of buildings to be condemned at the southern end of proposed Diagonal Street

Washington Street

The street system of Newark is chiefly of the rectangular block type, with several important avenues radiating from the center. In the newer parts of the city, particularly Clinton Hill, this system has been so developed that the result is unusually pleasing, and very serviceable. Unfortunately, in laying out the older parts of the city the rectangular system was not as closely adhered to as might have been. Washington Street is an example of a street which fails to perform its proper functions because of the irregular manner in which it crosses Market Street.

Broad Street is, and probably always will be, the great north and south thoroughfare of Newark. Its ample width, 132 feet, enables it to accommodate an enormous amount of traffic. But there is need of several large north and south thoroughfares, parallel to Broad Street, and at proper distances from it. Washington Street is far enough from Broad to develop independently, yet near enough to absorb all excess travel which cannot be accommodated on the latter. Furthermore, Washington Street is so situated as to perform duties which can never be performed by Broad Street. It starts at Bridge Street, where nearly all through north and south traffic from the east and northeast must enter or leave Newark. It runs south across Market, with the very disturbing offset already noted at that point, and on to Clinton Avenue. Every statistical study we have made of traffic movements as related to Washington Street points to the same conclusion, that it should not stop at Clinton, but should be continued to Frelinghuysen. The connection between Washington Street and Frelinghuysen Avenue would create a complete, straight, natural north and south crosstown thoroughfare. The present plan of only one north and south thoroughfare must be abandoned if Newark is ever to be relieved of the village atmosphere which it now enjoys.

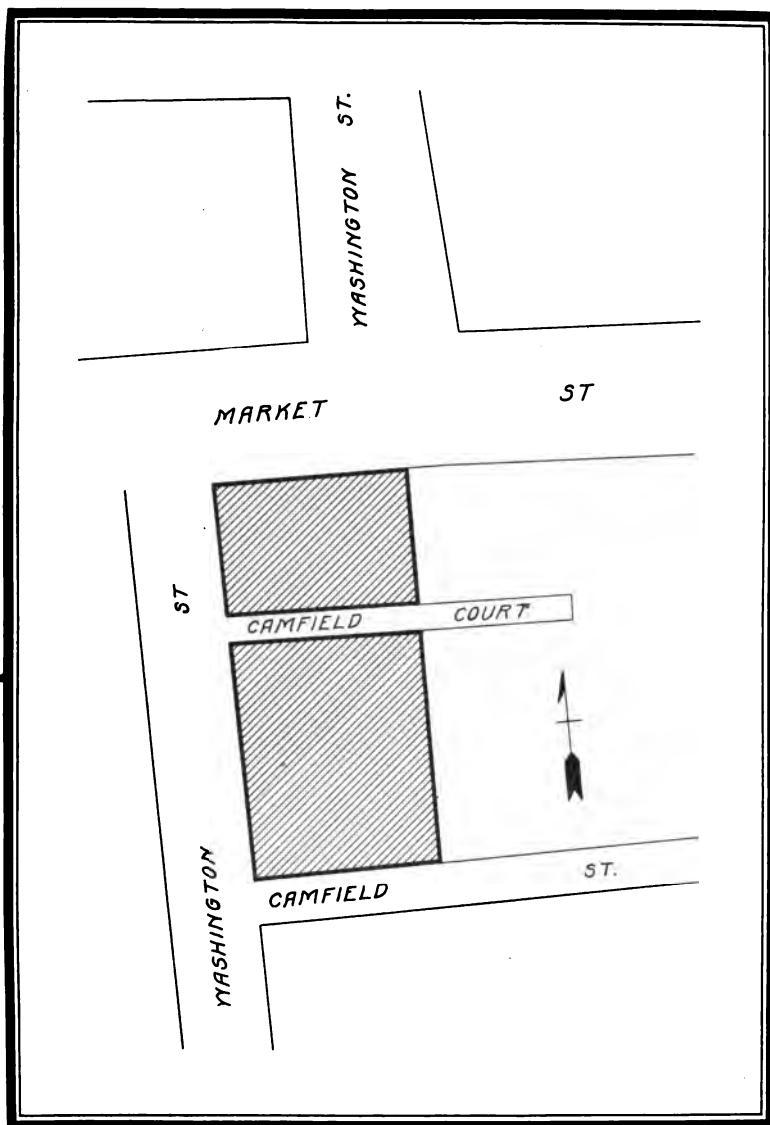


PLATE IV.

Proposed Widening of Washington Street at Market Street

Probably the greatest hindrance to the immediate commercial and traffic development of Washington Street is the break, just mentioned at Market Street. The map suggests a method of removing it. To be sure, property is expensive at this point and the improvement might not produce tangible results at once; yet it is safe to say that in twenty years Washington Street would so develop in commercial and other uses as to repay the cost of improvement through increased taxable values.

The assessed valuation of real estate within the suggested widening is \$720,000. It would probably cost less than \$2,000,000 to complete the improvement.

Bridge Street

In Chapter II. will be found a description of the proposed improvement of Bridge Street, from Broad Street to the Passaic River. This is almost the only entrance to the city from the east and northeast. The size and character of our city demand that a dignified approach here be made. The street should be widened and repaved, the grade lessened and the architectural surroundings improved. The accompanying map shows a suggested widening to 100 feet.

The assessed valuation of real estate needed for this improvement is about \$160,000. To complete the entire improvement, grading, paving, etc., would probably cost \$400,000.

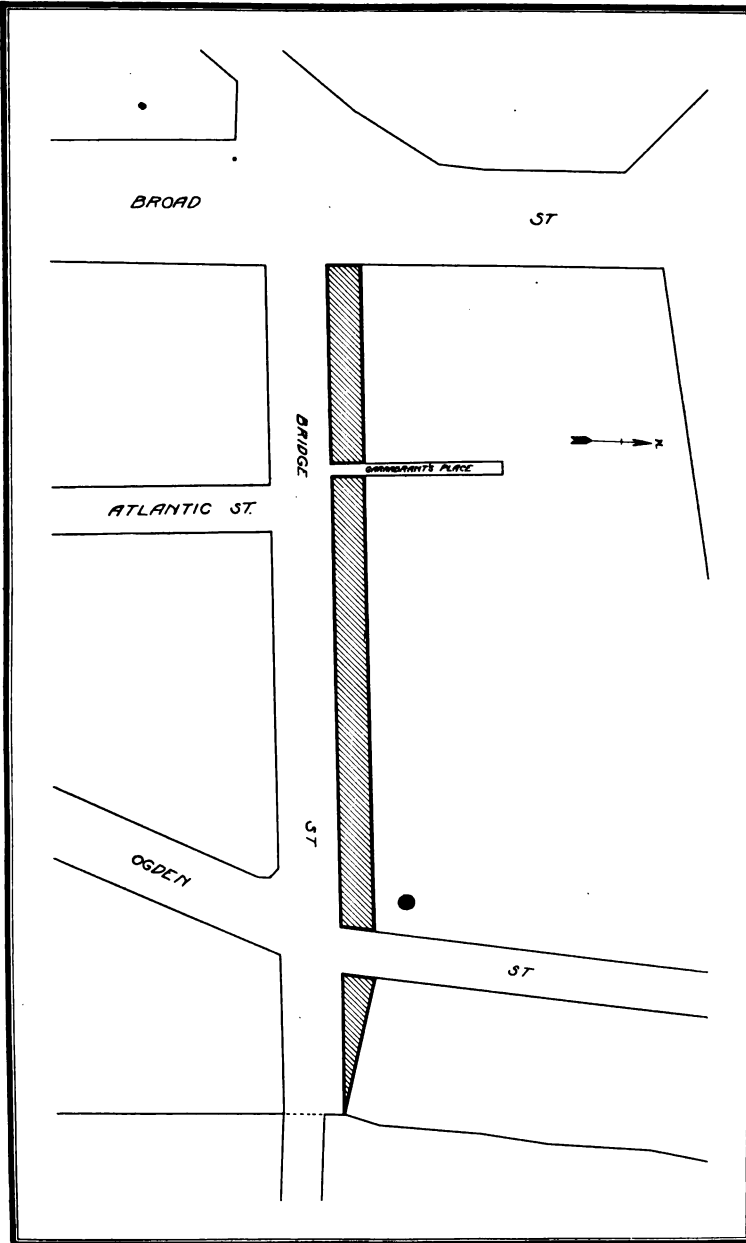


PLATE V.
Proposed Widening of Bridge Street

Lafayette Street

There is not a continuous east and west crosstown thoroughfare in Newark outside of Orange Street, and here again arises the question of proper expansion in street system versus the village conditions for which Newark is fast becoming unpleasantly famous. North of Market Street an admirable east and west crosstown thoroughfare will be secured by the completion of Diagonal Street, via Central Avenue. It will serve for both trolley and vehicular traffic. At a like distance to the south of Market Street a good east and west thoroughfare can be obtained by making proper connections between Lafayette and William Streets. The latter would have to be regraded for a short distance each side of High Street. This improvement would give an east and west thoroughfare unequaled in the city. Its connections with Springfield Avenue and Hamburg Place would afford relief not only for vehicular traffic on Market Street but also for street cars. No other single improvement, with the possible exception of Diagonal Street, would do as much as this one for the betterment of rapid transit. Few suggestions can be offered which could be of more benefit in the long run to the city and to all interests attendant upon the development of a good street system.

The property affected by this improvement is assessed at approximately \$600,000. It would cost about \$1,500,000 to complete the improvement, with all grading, paving, etc.

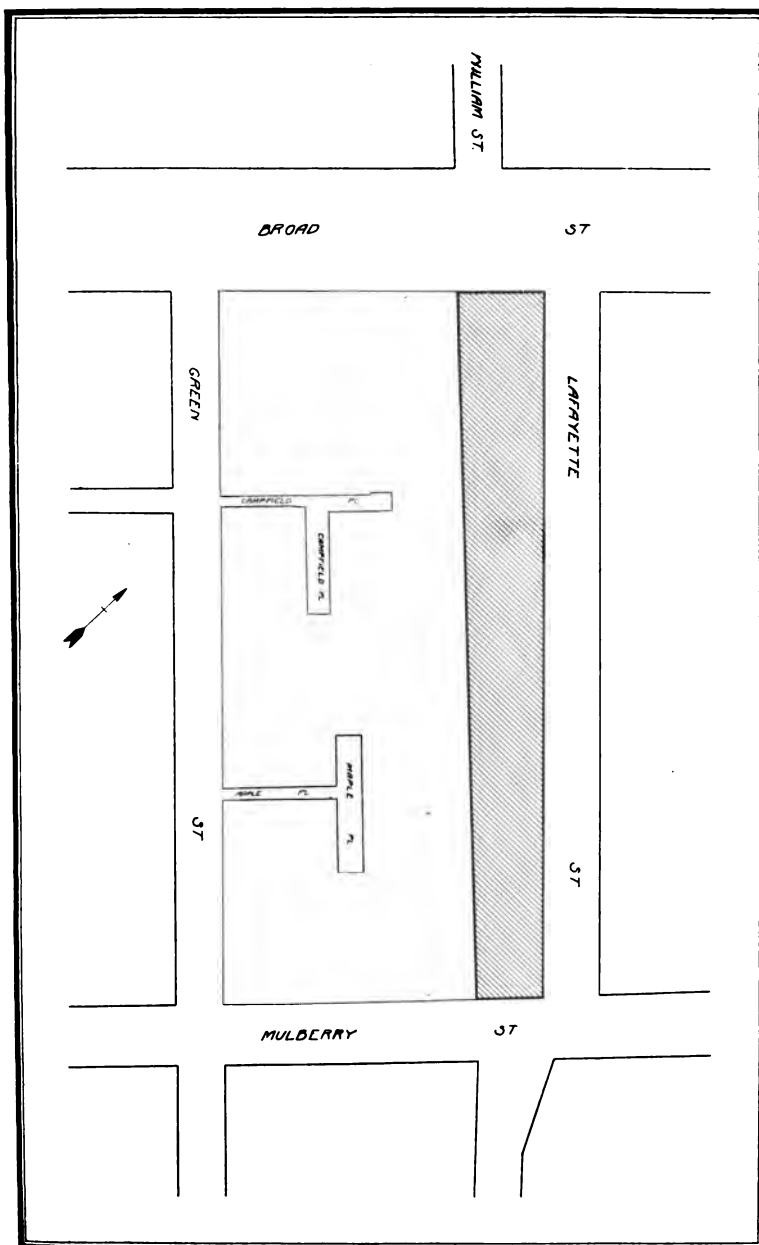


PLATE VI.
Proposed Widening of Lafayette Street

Frelinghuysen Avenue

In discussing the improvement of Washington Street, it was pointed out that a connection between that thoroughfare and Frelinghuysen Avenue would form a straight and natural north and south crosstown thoroughfare unequalled in the city. A glance at the map confirms this statement. Two streets only connect Newark with Elizabeth,—Frelinghuysen Avenue and Elizabeth Avenue. Frelinghuysen Avenue is the one which, were it properly connected would naturally be most used, for the excessive grades and curves of Elizabeth Avenue restrict it almost entirely to local usage. Frelinghuysen Avenue is straight, of ample width and almost level. These qualities make it a natural crosstown thoroughfare, and it would be used as such were it connected with Washington Street at its north end. Although this improvement is not at present urgent, it soon will be, and it will rapidly increase in cost if delayed. Its accomplishment would constitute a long step ahead in the development of a good street system in Newark.

The assessed value of the real estate involved is approximately \$300,000, and the total cost of the improvement would be about \$750,000.

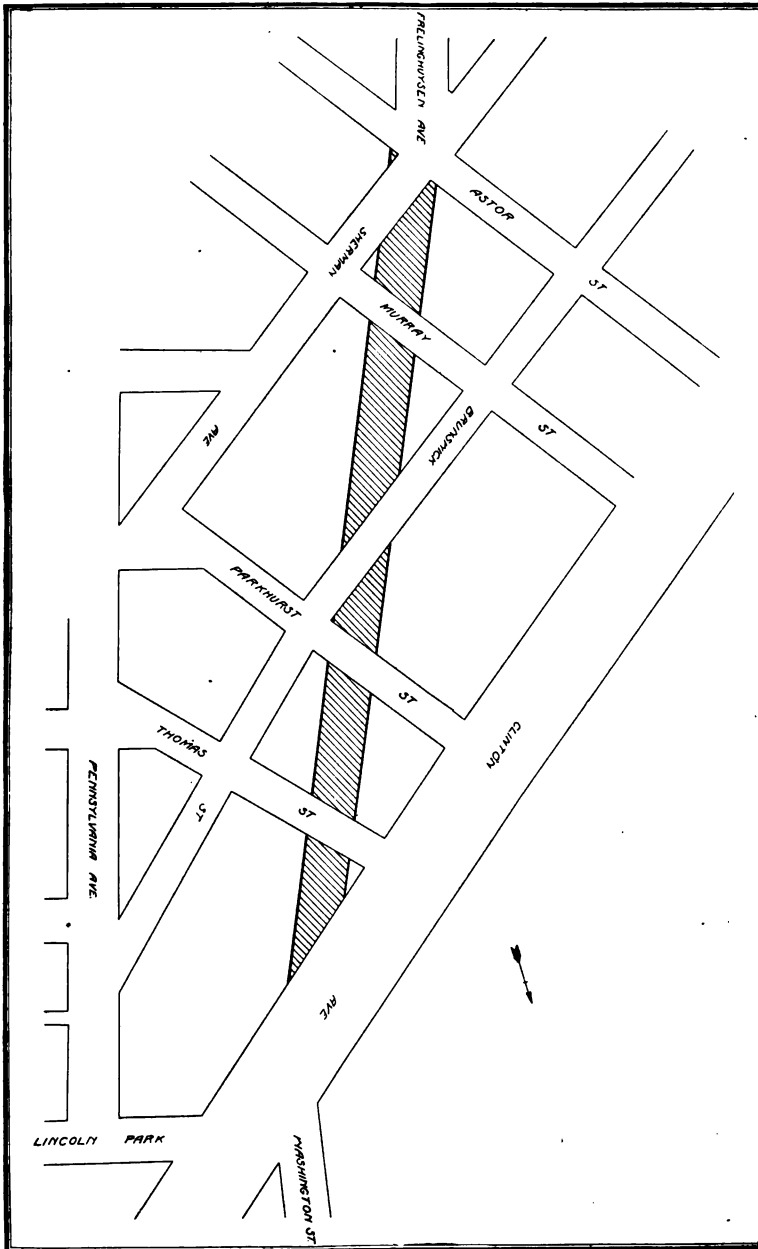


PLATE VII.

Proposed Continuation of Frelinghuysen Avenue to Connect with
Washington Street

Beaver Street

Clinton Street owes much of its growth in business and in fine office buildings in recent years to the fact that it is closely connected with Market Street by Beaver Street. This latter, which was a few years ago a despised and neglected alley, is rapidly becoming important on its own account and not simply because it is a short cut from Market to Clinton. Were Beaver Street extended on the south to Mechanic Street, the latter would at once become a far better street for business and for offices. It is too narrow to be used to advantage for through traffic, but not too narrow to serve well for many other purposes.

Beaver Street might also well be extended to the north as far as North Canal Street, there connecting with Pine Street. The plan shows how helpful this extension of Beaver would be to the development of business and the movement of traffic near the center of the city. Among other things, it would break the long blocks, 750 feet in length, which now extend from Broad to Mulberry.

The assessed value of the real estate involved in the suggested change is about \$700,000. It would cost about \$1,500,000 to complete the whole improvement.

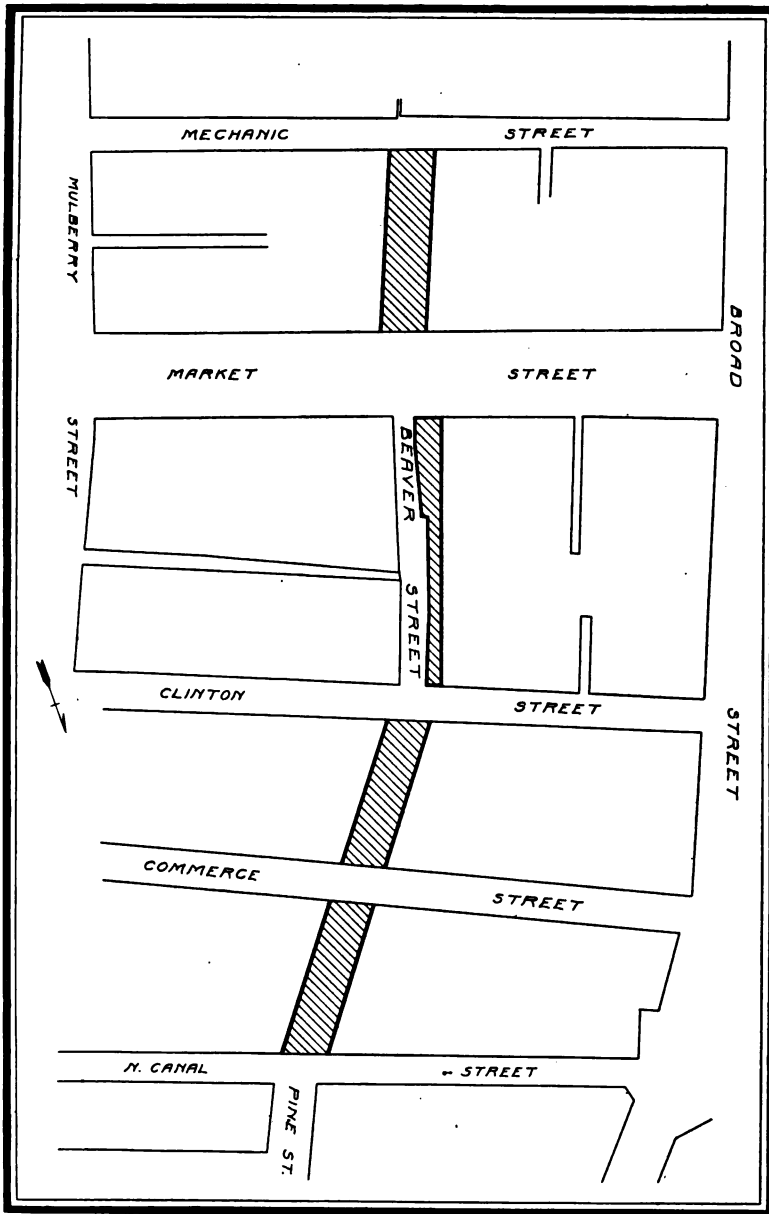


PLATE VIII.
Proposed Extension of Beaver Street

Plane Street

The abrupt ending of Plane Street at Court Street makes it unsuitable as a north and south highway for vehicular traffic. Plane Street is a business thoroughfare of no mean proportions. It will continue to grow, particularly as Washington Street will be burdened with increased trolley traffic. Were it continued to Washington Street its increased usefulness would soon become apparent, and another step would be taken in the development of an efficient street system.

The assessed value of the real estate within the zone of improvement is about \$110,000, and the entire change could probably be made for \$250,000.

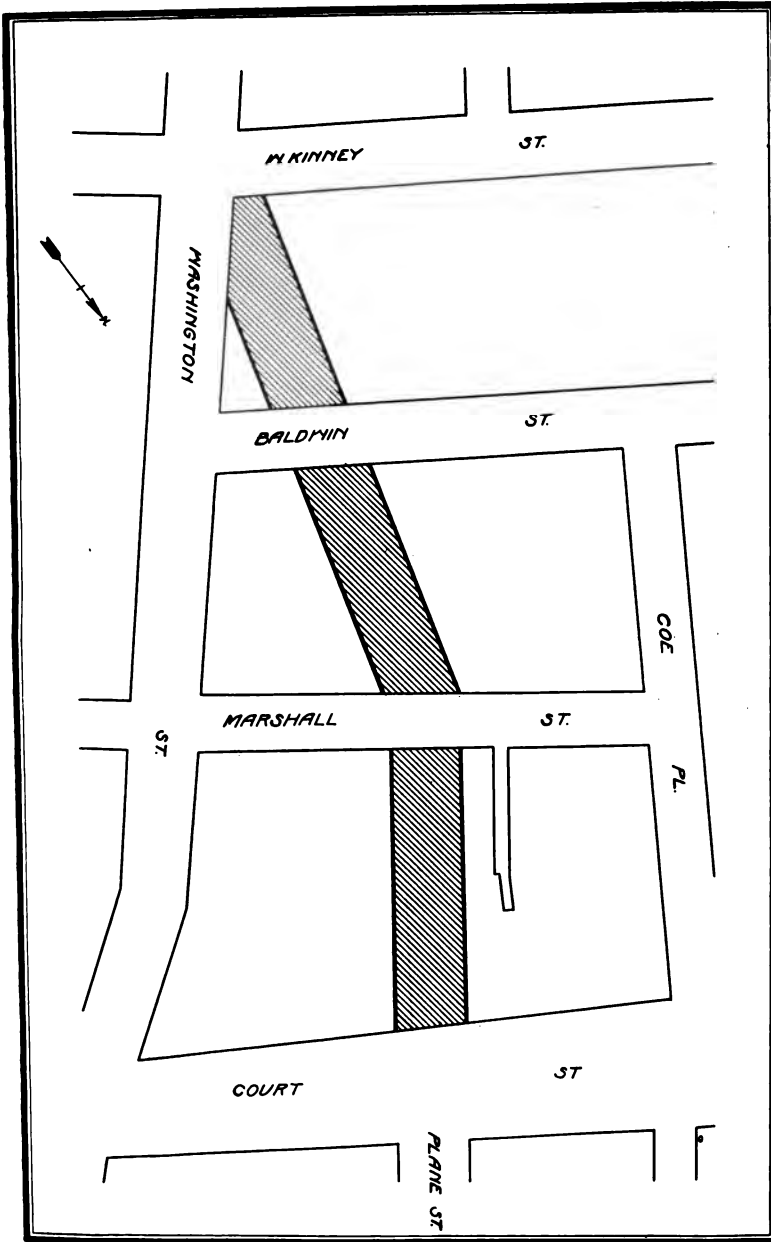


PLATE IX.
Proposed Continuation of Plane Street

Belmont and Norfolk Connections

Belmont Avenue, Norfolk Street and Clifton Avenue form three of Newark's best streets, streets of which any city could be proud; but the poor connection in the block between Springfield and South Orange Avenues is impossible in a city the size of Newark. Here could be one of the greatest thoroughfares in the city. It is so far from the business district that it can easily create a center of its own, and it could become not only a great traffic and business highway, but also one of exceeding beauty by reason of its situation and attractive surroundings. All this it would have been before, were it not for the obstruction formed by the block shown on the accompanying map. A glance at the general map tells the possibilities of this thoroughfare, extending as it does from one end of the city to the other.

It is suggested that the city acquire and condemn the entire block bounded by Jones Street, South Orange Avenue, Beacon Street and Springfield Avenue. Were it possible to apply here the principle of excess condemnation, the city could reimburse itself to a large extent on this improvement.

The assessed valuation of real estate needed for the improvement is about \$450,000. The change would perhaps cost \$1,000,000. Would not the results obtained be worth far more than this?

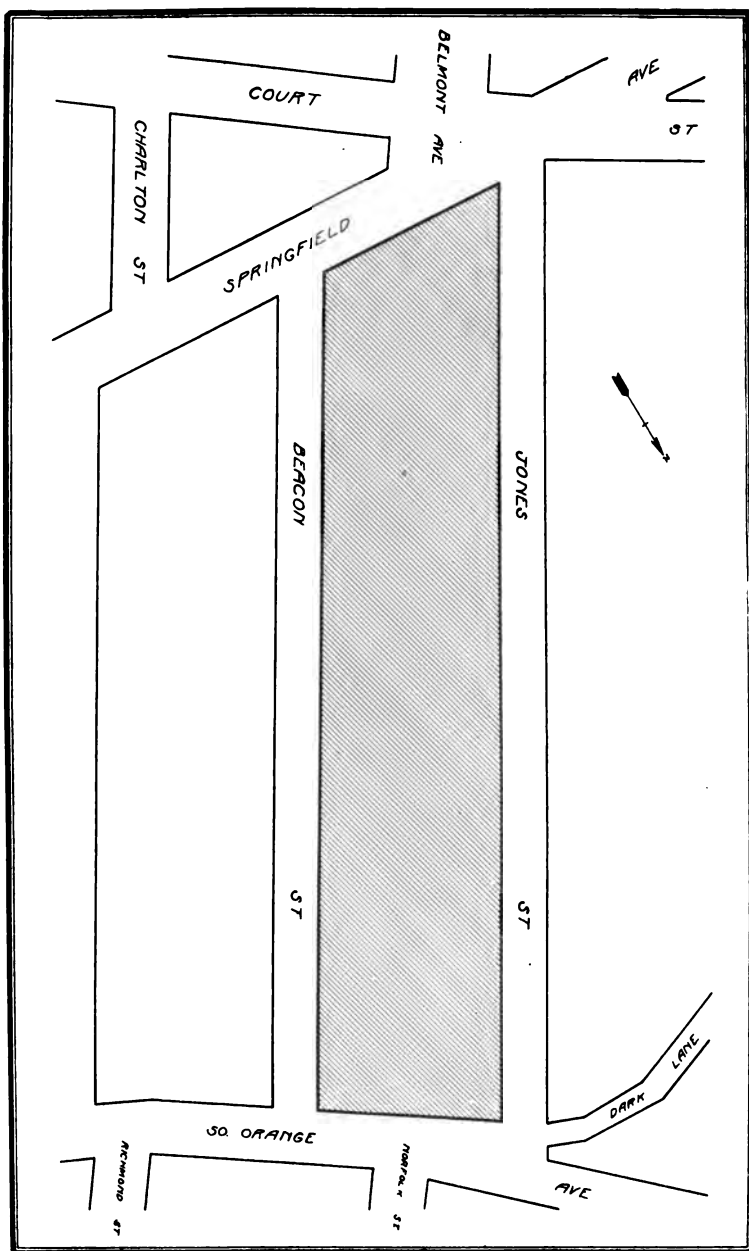


PLATE X.

Proposed Connection of Norfolk Street and Belmont Avenue

Green Street

Were Green Street continued westerly to Washington Street, as shown on the map, several desirable results would be attained. A new vista would be opened up toward the City Hall. Present traffic on Green Street would have an outlet to the west. If the continuation were carried, by a diagonal street, to the junction of Plane and William Streets, the new Board of Health Building would be set off to advantage.

There are only one or two high-valued properties involved in the improvement, and several very undesirable properties would be eliminated by it. Much low-valued property would be greatly improved and the improvement would apparently very nearly pay for itself in increased property values. The map shows that the improvement is, in reality, a widening and extension of what is now Pearl Street.

The assessed value of the real estate involved is about \$200,000. The completed improvement would probably cost about \$300,000.

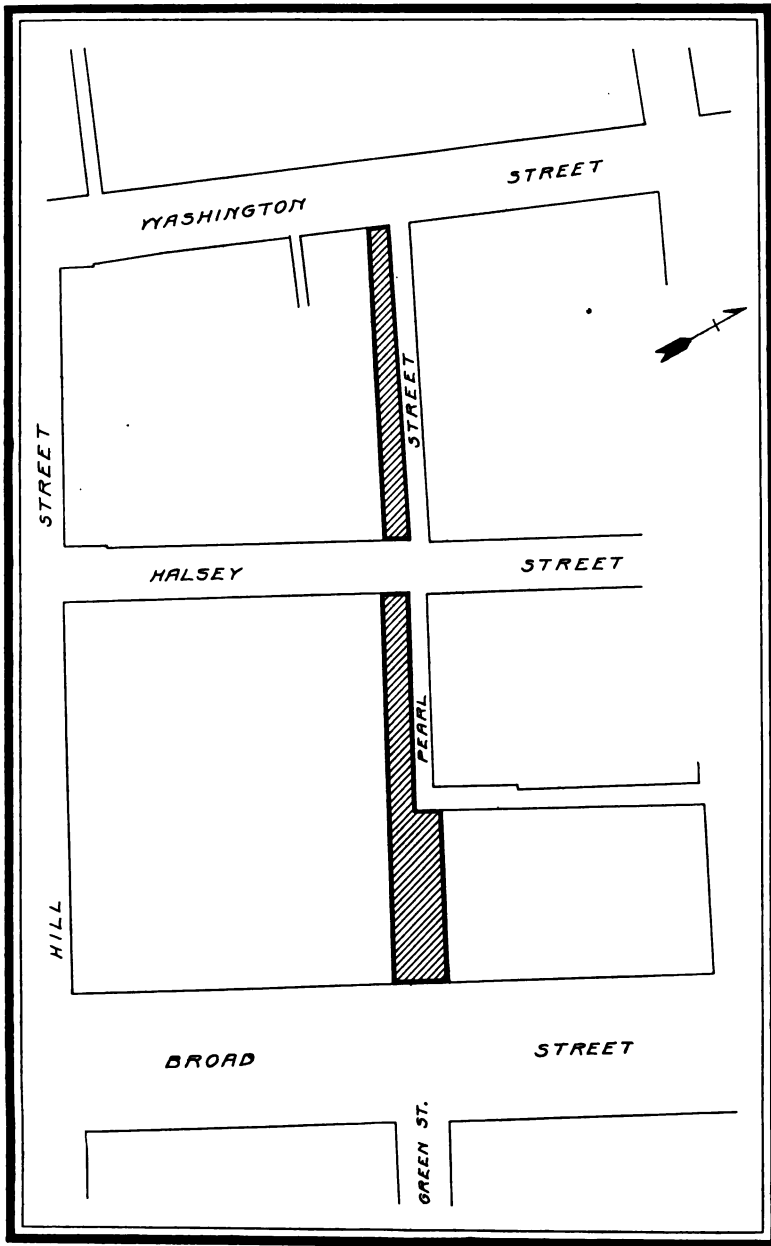


PLATE XI.

Proposed Extension of Green Street

High Street

One of the best crosstown thoroughfares west of Broad Street is High Street. It is much used by vehicular traffic at several points. Its value for this would be greatly increased by the removal of two breaks,—one at Orange Street and the other at Eighth Avenue. These two crossings are particularly bad in view of the large amount of traffic which uses them.

The assessed valuation of property affected by the two suggested improvements is about \$35,000. The total cost would probably be \$100,000.

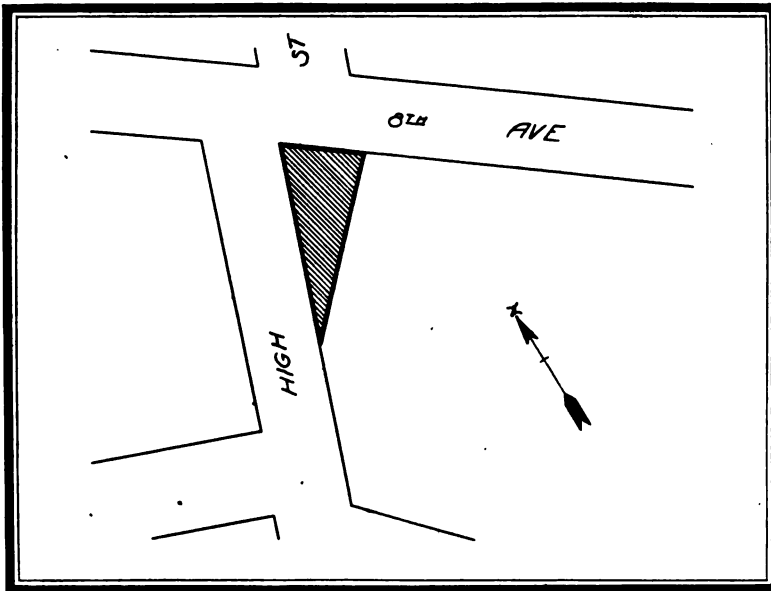
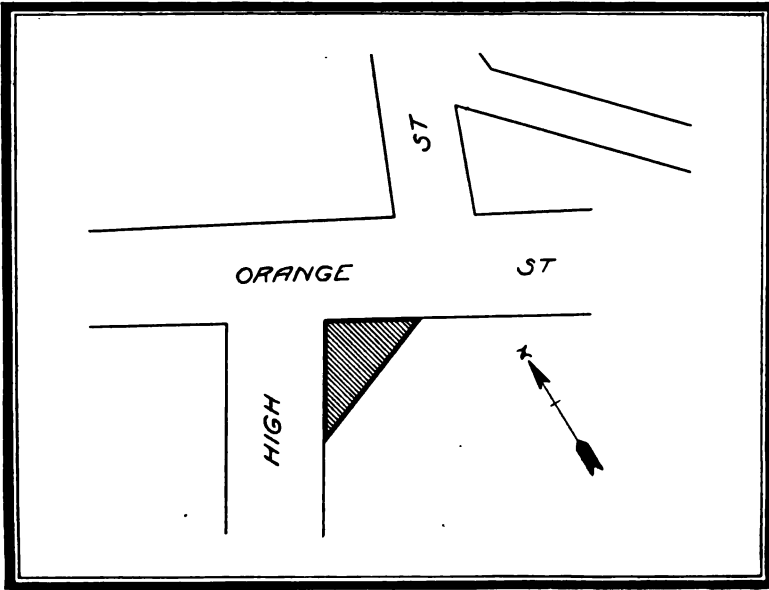


PLATE XII.

Proposed Straightening of High Street at Orange Street and at Eighth Avenue

Proposed Extension of Third Avenue

All wheeled traffic entering Newark from the northwest, originating in Bloomfield, Glen Ridge, Caldwell, Montclair, etc., enters on a single highway,—Bloomfield Avenue. That part of this traffic which goes to the northern section of the city, east of Branch Brook Park, must traverse almost the whole length of Bloomfield Avenue before it can turn north. Fourth Avenue is the first east and west street it reaches, and, though this is a good thoroughfare, its use would call for an extra journey of nearly a quarter of a mile, even if it were possible to use Third Avenue on the way. But the latter can not be used, for, as the map shows, it does not extend through to Bloomfield Avenue. The street opening suggested seems highly desirable in view of the great traffic, which will undoubtedly increase, between the localities mentioned. Furthermore, the improvement seems necessary for the logical development of a system of through east and west lines, especially as streets are here 800 feet apart.

The assessed valuation of property to be condemned for the improvement would amount to but \$52,000. Probably \$150,000 would more than cover the cost of condemnation, opening and paving.

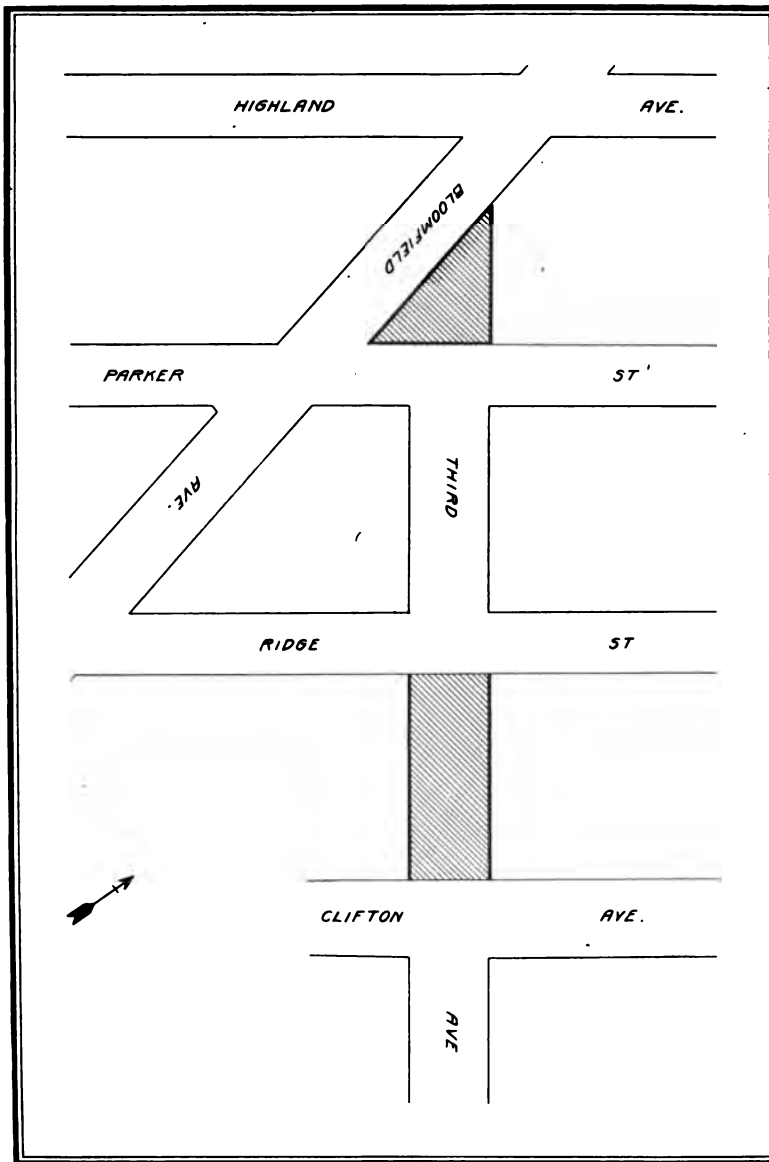


PLATE XIII.
Proposed Extension of Third Avenue

Jackson Street Bridge Approach

Wheeled traffic over Jackson Street bridge is nearly a thousand vehicles per day, and will undoubtedly increase as manufacturing districts nearby continue to grow. At present there is a steep grade from the bridge to Market Street producing a very dangerous condition. This grade should be reduced, and property should be acquired and cleared each side of the approach at Market Street, to enable drivers to see vehicles approaching the crossing from other directions than their own.

Examination of traffic conditions near this bridge shows much movement on Tyler Street, and from that street to the bridge. Several different routes are open between the bridge and the junction of Tyler and Lafayette Streets. Apparently Tyler Street is an outlet for a major portion of the whole manufacturing district. Considering also the fact that the junction of Ferry Street, Merchant Street and Hamburg Place,—the busiest point in the city east of the Pennsylvania Railroad—is but one block away, it is plain that there is need of good connection between the bridge and these two points. The route from the junction of Ferry Street and Hamburg Place, is very inconvenient. The map gives a suggestion which seems commendable. The present bad conditions, it should be noted, will become quite intolerable as the meadows gradually develop.

It is especially urged that the southwest corner of Market and Jackson Streets be immediately removed in view of its obstruction to through traffic on Jackson Street.

The probable cost of the improvement suggested has not been figured. Though large, it would not be prohibitive, as there are no costly buildings to interfere and land values are low. The greatest difficulty would probably be found at the crossing of the Central Railroad, and even this could no doubt be satisfactorily arranged.

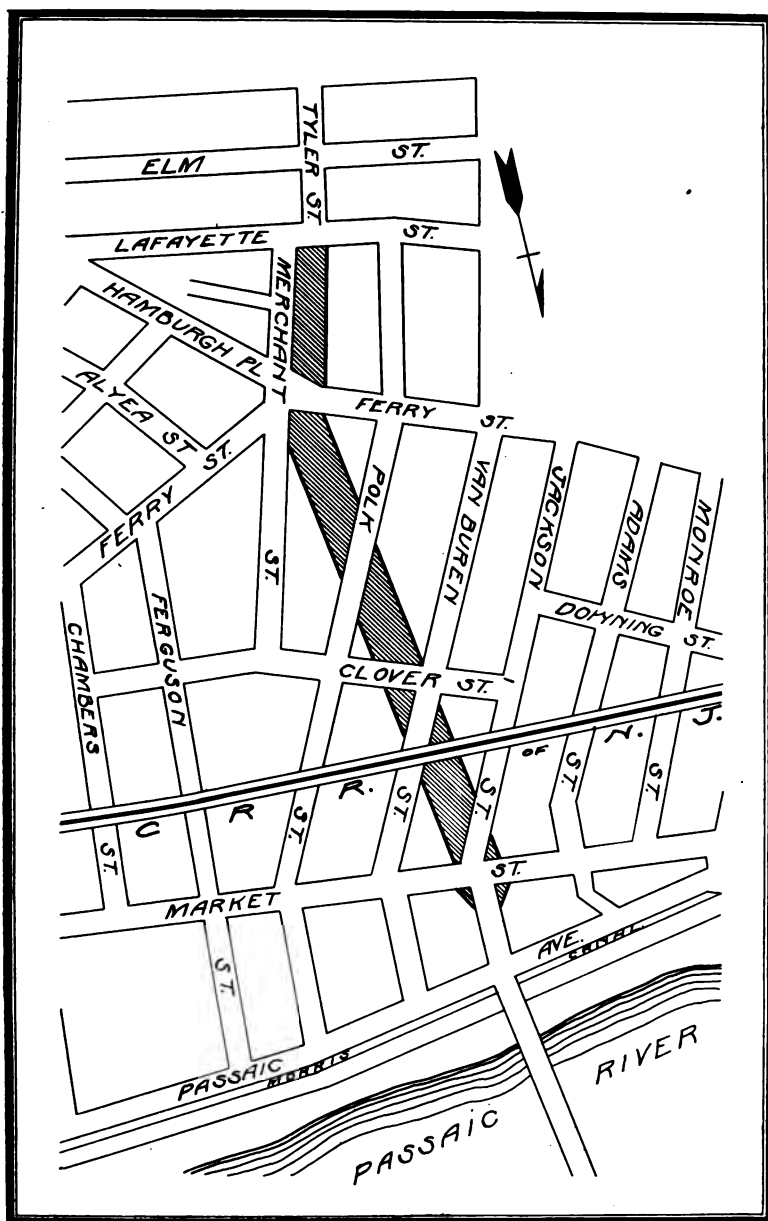


PLATE XIV.

Proposed Approach to Jackson Street Bridge

Vailsburg Section

The Vailsburg Section had a very haphazard growth before it was annexed to Newark. As a consequence, its street system cannot be made efficient without much expense. Apparently each property holder divided his plot regardless of his neighbors, with the result that there are no good crosstown thoroughfares, except Grove Street, Myrtle Avenue and Sandford Avenue. The map shows a suggestion for street openings, widenings, and extensions which would give this region a system of both residential streets and traffic highways sufficient to meet all probable demands. A plan of the kind suggested must be adopted before long, for the press of population will soon be felt here, as is shown by the many active real estate operations. Improvements can be made much more cheaply now than later.

Note the advisability of co-operation with both Irvington and East Orange in developing such a plan. It will be as much to the advantage of these towns as to Newark to have a street system permitting easy access from one to the other. Study should be made in this section for the proper location of parks, playgrounds and such public buildings as will later be needed.

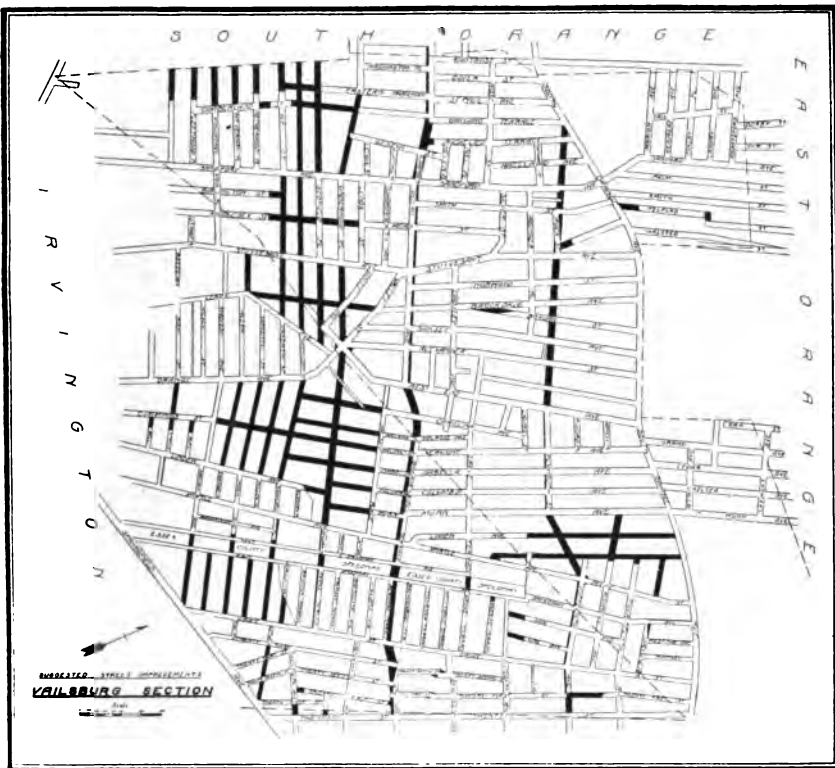


PLATE XV.

Black lines indicate suggested improvements

The Southern Section of the City

South of Clinton Avenue and west of Elizabeth Avenue is one of the most rapidly growing sections of the city, some day to become one of Newark's finest residential centers. The greater part of the street system has already been laid out, but there are a few undeveloped areas which, if properly arranged, will round out the scheme and produce a unified system. For through north and south streets it is suggested that Belmont Avenue, Bergen Street and South Tenth Street be developed in proportion to evident needs. For east and west streets, Chancellor, Lyons, Hawthorne and possibly Renner Avenues, should be so developed as to carry the principal through traffic. It may also be advisable to extend Clinton Avenue as shown on the map, there being no good diagonal streets in the entire region.

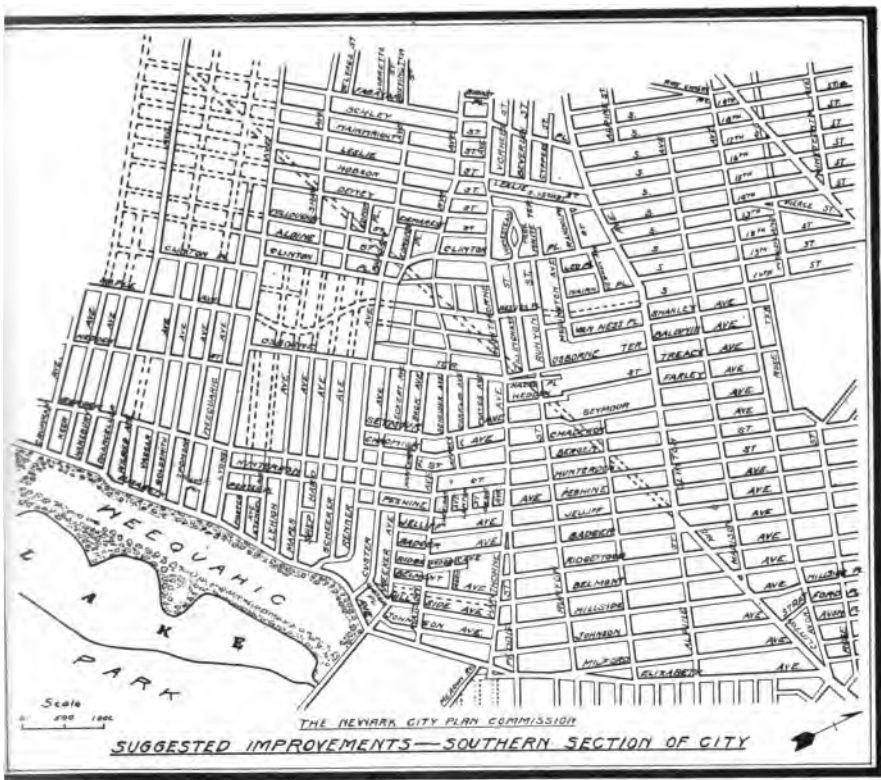


PLATE XVI.
Suggested Improvements—Southern Section of City

How to Obtain Results

Here is a table which shows the estimated cost of some of the improvements suggested and the return which each would bring within ten years by increased values and sale of surplus land:

IMPROVEMENT	COST	RETURN TEN YEARS
Front Street	\$ 250,000	\$ 100,000
Diagonal Street	2,500,000	2,000,000
Washington Street	2,000,000	.....
Lafayette Street	1,500,000	.....
Frelinghuysen Avenue	750,000	500,000
Bridge Street	400,000	100,000
Beaver Street	1,500,000	1,000,000
Plane Street	250,000	100,000
High Street	100,000	.....
Green Street	300,000	200,000
Belmont Avenue and Norfolk Street.....	1,000,000	500,000
Third Avenue	150,000	.....
	\$10,700,000	\$4,500,000

Under the present laws, which authorize the expenditure of one and a half million dollars per year for street improvement, all of these improvements could be completed within ten years.

By following a program of this kind, an opportunity is now afforded Newark, without unduly burdening its taxpayers, to improve its plan more cheaply and effectively than it can at any later date. Here we have not only a solution of the problem of trolley operation, Newark's greatest one at present; but also an opportunity to create, in a normal way, at least three good business streets, with corresponding increase in taxable values and tax returns. These suggestions so round out the entire street system as to permit a natural and greatly needed expansion of the business district. The "Four Corners" has now reached a stage of development where its existence as the one busi-

ness center has become a hindrance to healthy growth and an advertisement of civic inefficiency.

Some citizens seem to look with reluctance on the expansion of the business district, but if the ratio of growth of the past forty years is maintained, and there is little reason to doubt that it will be, Newark will very nearly double its population within thirty years and it is absurd to think of a city of 800,000 having but two business thoroughfares! Furthermore, the growth cannot come if provision is not made for it.

There are other improvements needed which, though not now as pressing as those mentioned, are nevertheless demanded if the growth of residential districts is to be toward greater street efficiency. Reference is here made particularly to the Vailsburg section. The map of this section in this report well illustrates the large amount of work which must some day be done to make anything better than chaos of its street system. As this region is gradually being built up and its prices advancing it would be wise to complete improvements here as soon as is possible.

If the city enters largely on street improvements, as it surely should, and finds also that sections like Vailsburg must be developed at the same time, it should study carefully the advantages of excess condemnation and try to secure its benefits by proper legislation.

The Vailsburg map shows several large tracts of land still to be opened, which can be developed at a profit under excess condemnation, and so greatly lessen the cost of a unified street system.

Vailsburg is not the only section in which improvements are needed, reference having been made to it as perhaps the best illustration. In mapping out work it may be found advisable to expend a part, or perhaps all, of available street-opening funds in outlying sections rather than in the business districts, and to apply the excess con-

demnation plan in the latter. Although recent legislation enables the city to expend considerable money in street widenings and extensions, to undertake all the improvements needed within a period of a few years would put on the taxpayers a very heavy burden.

Excess Condemnation

There has been some antagonism to excess condemnation, due probably more to the fact that it is so vaguely understood than because of any real demerits.

The Free Public Library, at the expense of considerable time and labor, has gathered much literature concerning excess condemnation in the form of documents, reports, laws, maps, etc. In addition to this a study of the subject was made and several articles published in the "Newarker," for March, April, May, July, 1913, from which the following quotations are taken:

"Excess condemnation is the acquisition through condemnation proceedings by the governing agency, for example, a city, of more land than is actually needed for a public improvement, such as boulevard, park, street or playground, in order to meet the expense of this improvement later by the sale or lease of the surplus. The taking of too great a surplus of abutting land or property is prohibited and the subsequent resale or lease of such parts as are not needed is carefully guarded by restrictions for the protection of the improvement, such as regulations defining the size and shape of lots to be replatted and the type of buildings to be erected thereon.

"This purpose, for which the city claims the land named is needed, must be one which will manifestly promote the convenience, health, prosperity and general welfare of the whole community, in the long run. The demand must not be made to serve the interests of a special

section or a special class. It must be plainly based on the public welfare, interpreting that phrase in the light of the conditions of community life at the time.

"By the application of the principle of excess condemnation, owners whose property is condemned receive full value for their property at the time of condemnation, but not the improved value. The latter, representing a normal increase on an investment of the entire city, accrues to the city, thus frequently relieving the taxpayer from any assessment for the improvement.

"Excess condemnation not only enables the city to make improvements, such as opening new streets, at practically no expense to the taxpayer, it also insures the success of the improvement by the proper treatment of the abutting property. Instead of a medley of handsome residences, ramshackle tenements and unsightly stores fronting a beautiful boulevard, there are buildings which, by their correspondence with the whole scheme, ensure its natural development and permanence. In other words, under excess condemnation, the improvement is treated as a unit, not as an accident.

"Excess condemnation implies, therefore, the city's right to profit by its own investments in preference to its exploitation by a few individuals; permanent benefit to the entire community with injustice to none; utilization of small and irregular plats which otherwise cannot be successfully treated; the development of the improvement as a unit instead of as a series of unrelated accidents. Excess condemnation is the first and essential step in city planning, and the sine qua non of its success.

"In Europe excess condemnation has had a long history. By the application of this principle, Paris built the Avenue de l'Opera, Vienna the Ringstrasse, and London has carried through a long series of street improvements dating from the completion of Garrick street in 1861, when 72% was realized through the sale of surplus land, to the

present time. The most notable of these achievements was the completion of the Kingsway in 1905. This magnificent highway, cutting through some of London's most congested districts, connects North and South London through the great commercial centers of Holborn and the Strand. It was evolved from a 'chaos of rookeries' at a cost of over \$25,000,000, and is likely to involve no financial burden whatever to the taxpayers, according to the statement of the London County Council. This is particularly significant, as it involved the expense of rehousing a large number of people of the laboring class.

"This policy of realizing at least a part of the cost of the improvement from the sale of surplusage is known as 'recoupment.' In all the street improvements initiated by the London County Council, a varying per cent. of the cost has been met by the application of this principle. In one instance, the improvement of Northumberland avenue completed in 1876, the city made an actual profit of nearly \$600,000 over the cost of land and improvement.

"New York, Massachusetts, Pennsylvania, Maryland, Ohio and Virginia have statutes permitting the exercise of this power. Hartford has incorporated a clause in her new charter authorizing the practice. In Wisconsin, cities of the first class have the right to purchase excess land, but not to acquire it by condemnation proceedings.

"Excess condemnation seems not to have been practised in this country, except in the case of the acquisition of remnants, and even then always with the property owner's consent. A successful example of the application of remnant taking was the acquisition by New York City of remnants of property condemned for the construction of the Center street subway at Canal street. After building the subway and retaining the necessary space for entrances, the city sold the property at auction, "subject to the easement and reserving the space needed for entrances, at a price so near the original purchase price

that the easements and the space for station entrances involved almost a nominal expense.’”

Here is an example furnished by a near neighbor. The quotation is from the “American City,” December, 1913:

“Constitutional Amendment No. 1, adopted by the voters of the State of New York by substantial majority at the recent election, makes possible in all cities of the state the power of excess condemnation. It reads:

“The Legislature may authorize cities to take more land and property than is needed for actual construction in laying out, widening, extending, or relocating parks, public places, highways or streets; provided, however, that the additional land and property so authorized to be taken shall be no more than sufficient to form suitable building sites abutting on such park, public place, highway or street. After so much of the land and property has been appropriated for such park, public place, highway or street as is needed therefor, the remainder may be sold or leased.’

“This is based upon the recent Massachusetts Constitutional Amendment, and will be of tremendous assistance in readjusting street systems, constructing adequate bridge and other approaches, and in the expansion of parks and playgrounds.”

*Report of the Chief Engineer of the Board of Estimate and Apportionment of the City of New York for 1910.

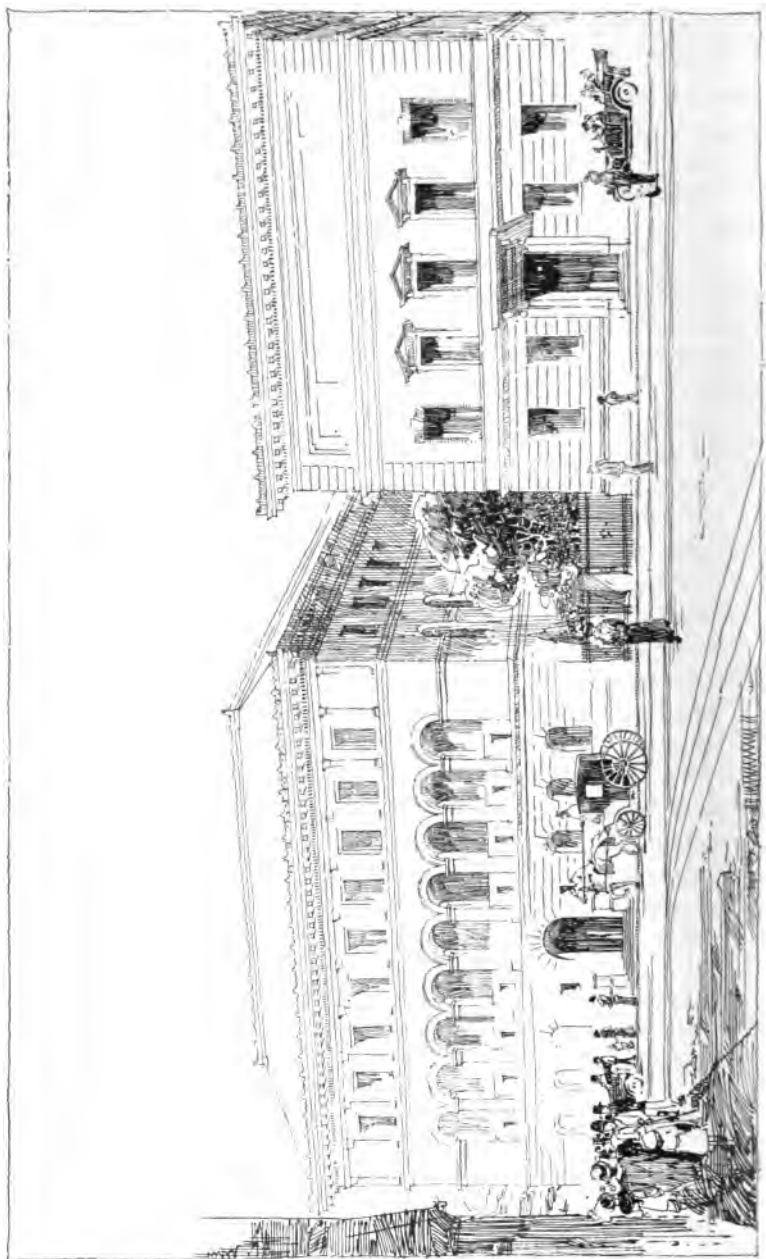


PLATE XVII.

The Free Public Library and the proposed New Museum building
as seen from the new Bridge Street

(*Ralph Harrington Doane, Architect.*)

CHAPTER II.

MUNICIPAL DECORATIVE IMPROVEMENTS

Civic Activities

This Commission has thus far confined its suggestions and recommendations to the physical well-being of the city, holding questions of municipal decoration as of secondary importance. But one of the basic purposes of planning is to help create a city in which men and women can work better and live more comfortably and more happily because of pleasant surroundings.

Newark has a Shade Tree Commission, one of the first to be appointed in this country, which is doing much to make the city more beautiful, and so a more inviting and comfortable place in which to live and work.

There is also an Essex County Park Commission which, in a few short years, has done more to make the people realize the value and importance of adding beauty to utility, of looking far into the future, and of providing for healthful and inspiring recreation in building our great cities, than many could have believed was possible when it was appointed. It maintains several parks within the city, the most notable being Branch Brook, now a wonderfully beautiful illustration of the power for good in landscape architecture.

The many beautiful school buildings recently erected, the extension of our playground system, the activity of the Free Public Library, and the growing demand for a Museum,—all well illustrate the rapid advance here being made toward the betterment of civic life.

There is, however, one feature of civic improvement notably lacking in Newark, and that is the systematic grouping of public buildings, and a dignified treatment of prominent street intersections and plazas in connection therewith.

Public Plazas

There are several possible plaza sites which cannot be overlooked in the vision of Newark of tomorrow. High values of real estate and intensive use of streets almost prohibit the creation of breathing spaces within the heart of the business section of a large and growing city. But chance or the forethought of the fathers has sometimes so located such areas, and good fortune has preserved them. Newark may be cited as a city peculiarly fortunate in this respect, for within its business zone there are two parks which trade and traffic can never touch. They already make one of Newark's few distinctive features and in time must become civic centers of the highest type.

Broad and Bridge Street Plaza

There are great possibilities of development near the intersection of Broad, Bridge and Washington streets. Near it are a Library, a Y. W. C. A. building and several churches. The new Museum building, now advocated, if immediately north of the Library, would not only replace some of the most unsightly buildings in the neighborhood, but would also accomplish a second good result by rounding out an effective scheme of arrangement.

Bridge street, in view of its ever-increasing traffic, and its strategic position as one of the city's most important gateways, should be widened, regraded and repaved from Broad street to the Passaic River. The increase in property values due to the completion of such improvements would very soon repay the initial cost.

A study should be made for placing, in due time, a bridge over the Passaic sufficiently high to eliminate the draw. The approaches to such a bridge would lead from the present level of the intersection of Broad and Bridge streets in Newark, to a point on Harrison avenue in Harrison, and were the bridge itself a structure in keeping with our civic-pride-to-be, here would be a proper "Gateway to Newark."



PLATE XVIII

BRIDGE AND BROAD STREETS.—Suggested widening of Bridge Street, elevation of the bridge across the Passaic and important buildings at the corner of Bridge and Broad ; all as seen from above the roof of the library building

(Ralph Harrington Doane, Architect.)

Military Park

Military Park will soon be very near the center of a part of Newark's busiest section. Its surroundings should be so planned as to make it maintain its strategic position with dignity and beauty. It is bordered by three very important streets, two of which are only in the infancy of their development. On the completion of Diagonal street, which will border Military Park on the north, more traffic will center at this park than at any other spot in the city. Here will be intersecting trolley lines from the north, east, south and west, the new Rapid Transit for Newark and all its suburbs, the terminus of the McAdoo Tubes to New York, large department stores, office buildings, club houses, hotels, etc.

It is suggested that this park be rearranged, in part, under the direction of a competent expert. The Soldiers' and Sailors' Monument should stand at the lower end, far enough from Broad Street and Park Place to gain a proper air of remoteness and dignity. If this very important monument were erected here it would be seen for a long distance south on Broad Street. To place it here would call for certain changes at this end of the park, and these would in turn entail certain changes to the north.

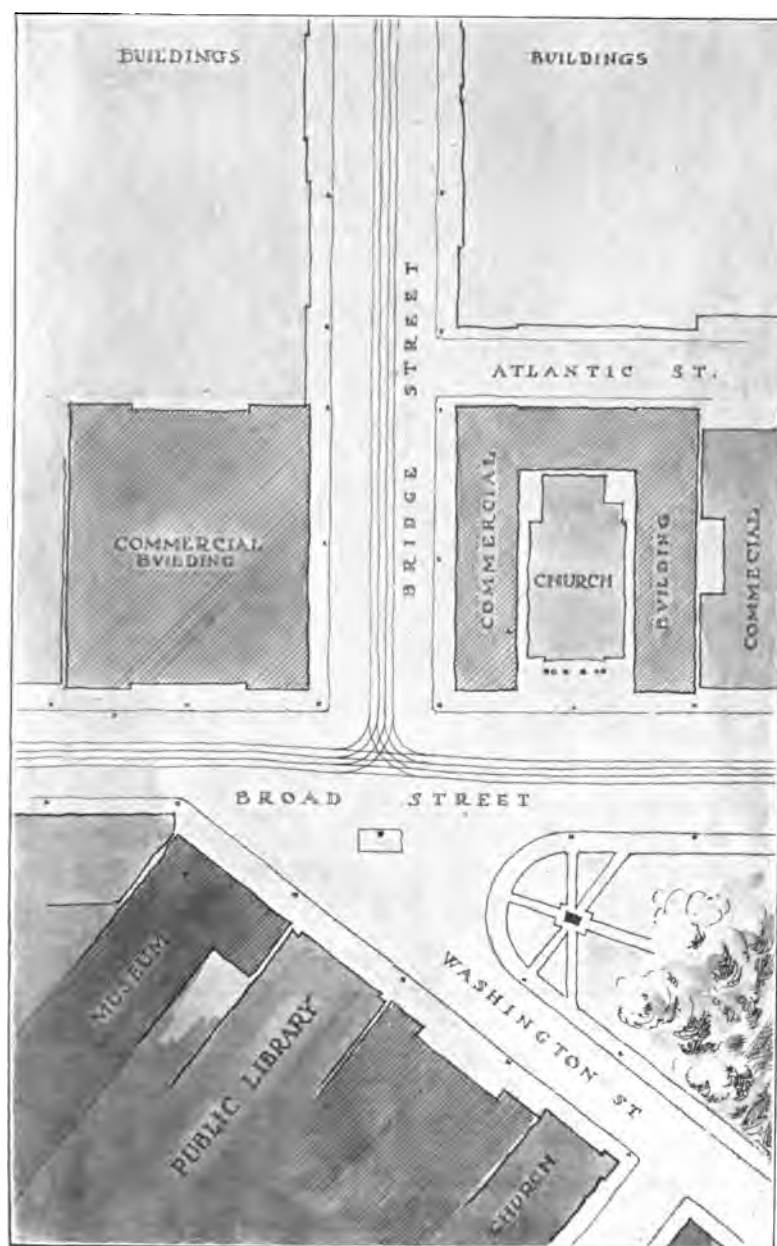


PLATE XIX.

Sketch of an improved Broad and Bridge Street, showing widening of
Bridge Street and suggested new buildings

(Ralph Harrington Doane, Architect)

Ironbound Plaza

The Pennsylvania Railroad is seriously considering a new station on its main line at Market street, and here are great possibilities for improvement. A large circular or octagonal plaza can be made at little expense by property condemnation. Were the new station placed in the center of the plaza, and designed to be in keeping with the character of other suggested improvements, two things would be accomplished: (1) The building would serve as an island of safety about which traffic would circulate, and (2) the plaza would be the terminating feature of several important streets, such as Market, Diagonal and Ferry streets. Upon the triangular plot between Market and Diagonal streets, the new Post Office could be erected, and possibly a new building could be built by one of the express companies on the southwest corner of the plaza.

A development of such proportions might warrant the construction of a few modern office buildings upon other available plots. This development commends itself, first, because it will carry to a heretofore neglected section of the city a fair and warranted proportion of public buildings, and, second, because it will serve as an inviting gateway to the large and promising eastern section of the city, whose possibilities in the way of harbor and meadow development are so great.

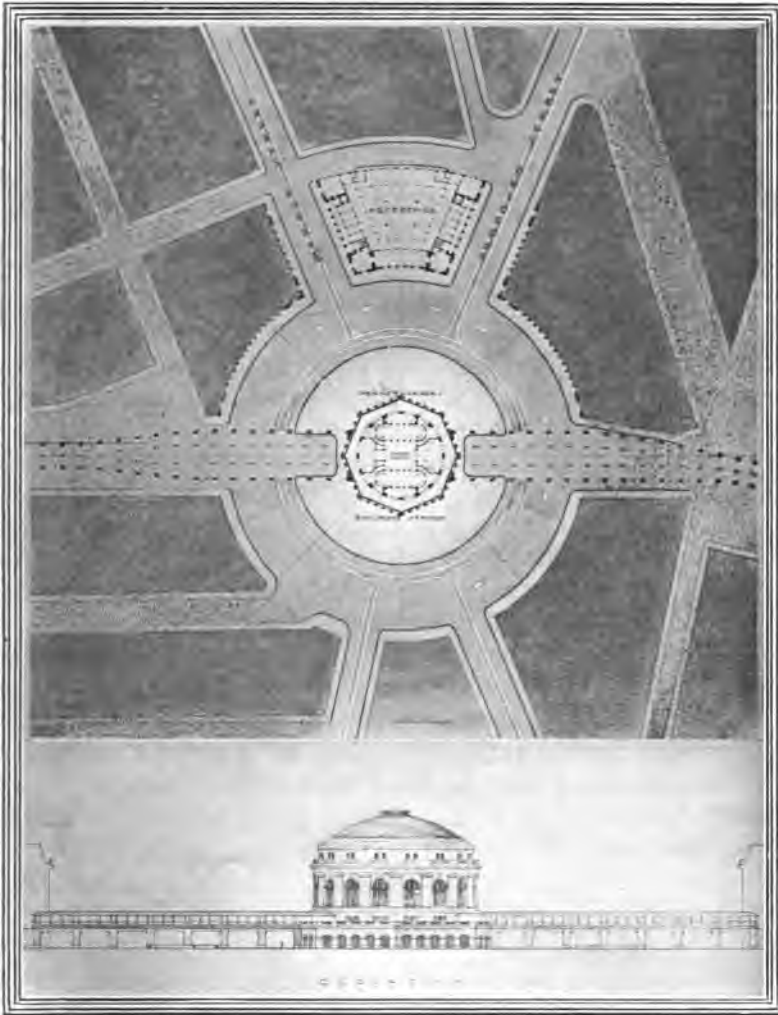


PLATE XX.

Suggested "Iron Bound Plaza" on Market Street, with new Pennsylvania Station in the centre.

Railroad Environments

American cities still think too much of size and too little of quality; they strive for population without much regard to its character. There is some reason for this in present-day America; but, after all, the best city in which to do business and have a home is the one that attracts to itself the best grades of new-comers in all walks of life. Now Newark does not present a good front to the passer-by. The car-window view of our town is rather repellent than otherwise. Why not begin to change this? Why not make the Newark-seen-from-the-cars as wholesome and inviting to the traveller as it already is solid and prosperous to those who know.

The Central has retained for decades an approach to Newark that has cost it many friends and made our city a reproach in the mouths of countless travellers. There are promises of improvement here; the city should see to it that those promises are realized, and soon.

The Lackawanna now gives the passer-by a view of back doors and the impression had, as he stops a moment at the station, is that he is in a third-rate suburb of a fourth-rate city. It would greatly profit Newark to pull down the old buildings in the triangle south of the tracks and request the railroad, as it could, to build an adequate and worthy station.

The Erie Station on Fourth avenue is probably the most disgraceful thing of its kind, in view of the importance of both city and road, now to be found in America. It will not be tolerated much longer.

The Hudson Tubes have a temporary home, which looks all that it is. It probably will not be there long. Meanwhile Newark is gaining daily words of approval from thousands of strangers, who get their first impression of our city as they step from the tube station and look out on Military Park. Only as they come by this route do



PLATE XXI.

View across proposed "Iron Bound Plaza" where the Pennsylvania crosses Market Street—Diagonal Street to the right, Market Street to the left and new Post Office facing the Plaza between the two.

(Bigelow & Tuttle, Architects.)

visitors get at a first view some little hint of what Newark is really like. These good first views are worth many thousands of hard dollars to the people of our city. At our city gates we receive our guests, our would-be or maybe new residents, manufacturers, investors and what-not. It pays to give them a right and true and wholesome first impression.

Now, the Pennsylvania will soon be electrified to Elizabeth and beyond. Trains passing the Market street plaza will be quieter than they now are and without smoke and cinders. Millions of passers-by will here get a glimpse of our city,—let us make it a true one; not overdrawn, not flashy, not merely pretty; but solid, dignified, broad, clean and interesting. A treatment after the manner suggested by Mr. Bigelow in his sketches would put Newark into the minds of millions of our fellow Americans as a substantial, self-respecting city, so prosperous that it can afford to make itself handsome and clean and so wise that it wants to.

Clinton Avenue Plaza

In the southern section of the city one of the most important street intersections is that where Clinton avenue, Elizabeth avenue, Avon avenue, Wright street and Somerset street come together. This is a rapidly growing business and traffic point. It will, in the near future, become a center of great importance, and could very profitably be enlarged and attractively decorated. It may prove advisable to build here a circular plaza of approximately 300 feet in diameter, having a monument of good proportions in the center to act as an island of safety and to distribute traffic in its proper directions. This proposal could well be considered by local improvement associations. A monument of proper character would be seen at a distance along each of the thoroughfares which reach this intersection.



PLATE XXII.

View down proposed Diagonal Street, from corner of Broad Street and Central Avenue, suggesting how the new street may look soon after it is opened

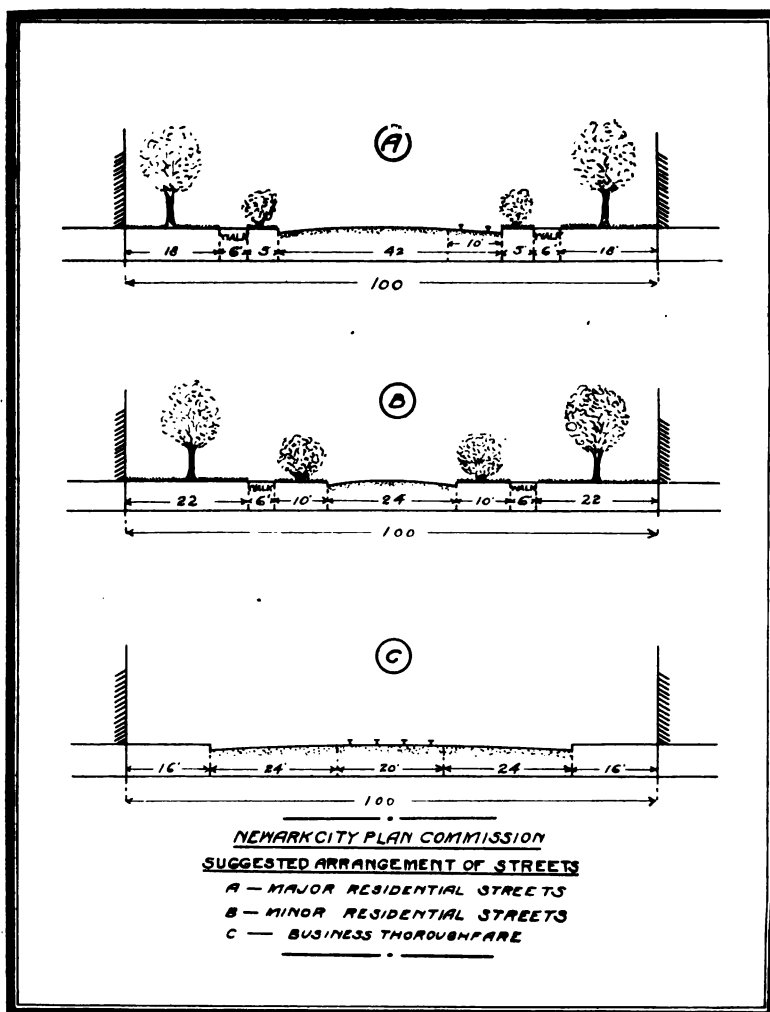


PLATE XXIII.

CHAPTER III.

STREET WIDTHS AND ARRANGEMENT

Street Congestion

That the street system of a large city represents its greatest investment and that it is the principal determining factor in the growth and successful development of that city, is a fact seldom realized by the general public. Few, if any, realize that a street system could be so poorly constructed as absolutely to inhibit development; or, on the other hand, that a street system could be so designed as to meet the needs of many decades, with few important changes. The largest cities of to-day have now reached and in many cases have far exceeded, the capacities of many of their busier streets. To remove this difficulty new streets are being opened and old streets widened at enormous expense. Work of this nature is for the most part very recent. Few streets have ever been so systematically designed as to meet all future demands; traffic has but recently reached unmanageable proportions, and only in the last few years has systematic study been applied to the question of street widths.

Land Distribution

The street system might be called the frame work of the whole city structure; though individual streets are local institutions which play important parts in the development and welfare of their respective communities. Streets occupy from twenty-five to forty per cent of the area of a city. Consequently, much space can be conserved for other uses by the judicious determination of street widths. This becomes a very important item in an intensively-used business district, for the greater the space devoted to streets the greater the area over which business must be spread, with a resultant loss of efficiency.

Excessive street widths in residential districts mean more scattered houses, and a greater distance to be traveled between business and residences. Land which could profitably be used in business districts is often sacrificed to unprofitable street widths, lot sizes are small, property values high, buildings are of great height and cover the whole area of lots, with corresponding difficulties due to congestion, loss of light and air, etc. In residential districts the largest permissible number of houses per acre is often built, and so streets which are unduly wide lead to high rents, small rooms, and bad housing conditions.

Cost of New Streets

Improvements made to streets of excessive widths are not only great in initial cost, but also in maintenance. An English authority, Mr. John S. Nettlefold, in "Slum Reform and Town Planning," estimated, after extensive surveys, that the interest on expenditures for street improvements, including opening, paving and sewers, "comes to \$0.25 or more per week on a house rented for \$1.50, if the number of houses is restricted to 15 per acre."

In the opening of new territory, the cost of improvement for paving and sewers alone has been known to exceed the value of the land. Another English authority, Mr. Alderman W. Thompson, in "Housing up to Date," estimates that the cost of street improvements in some instances has amounted to \$220 per cottage. In analyzing figures of this kind the effect which the street system exerts upon housing conditions is very apparent, for rents are correspondingly high when taxes for street improvements are great. It is common for property owners to build as many houses as is possible upon a given area to offset these tremendous costs, and as a result we have slums and tenements in many of our large cities.

Thus it is seen that widths of streets do not usually

coincide with local needs, and that where widths of streets depend largely upon the conditions under which they were established, a new and difficult problem arises immediately upon the change of those conditions.

Many and varied methods of meeting the problems of excessive cost in the opening, widening and improvement of streets have been tried; among others, excess condemnation and single tax. They may both be called results of unwise city planning.

Street Standardization

Streets may be divided into three classes, (1) Main traffic highways; (2) Ordinary business streets; (3) Residential streets. Several subdivisions are possible under each of these headings, and no hard and fixed rule can be established as to the proper width of any one of them. In fact, the cause of many street problems has been an unwise attempt to standardize widths. No such standardization has been successful, and it is very doubtful if it ever could be except in a very general way.

Laws in many cities fix street and sidewalk widths, with varying degrees of success. For instance, there is in New York City an ordinance dealing with street arrangements which requires a thirty foot roadway in all streets sixty feet wide; a forty-two foot roadway in all streets of eighty feet; a sixty foot roadway in all streets of one hundred feet. To one familiar with New York the absurdity of such an ordinance is quite evident. Compare two streets of like width, one in the east side tenement districts, and the other in the down town wholesale shippers' district. In the former will be found, say, fifty or more pedestrians to one vehicle, and in the latter, fifty vehicles to one pedestrian, though in each case the width of the roadway and the width of the sidewalk are the same.

Another very glaring error is the ordinance enforced in some cities which requires a specific width, say a mini-

mum of forty or fifty feet, in all residential streets. Under such a rule the general character of a neighborhood is often immediately lowered, because owners must erect as many houses as is possible upon any given land, to obtain repayment for excessive expenditure for street improvements. An ordinance of this nature is sometimes demanded by so-called foresighted civic bodies, on the plea that some of the streets laid out under it may by and by become traffic or business thoroughfares, although not one out of fifty is likely to be so developed. Thus forty-nine expensive streets are laid out uselessly to secure a needed width in one.

Another great mistake often made in trying to establish a general street system is that of too rigidly adhering to a defective scheme of extension, like the gridiron plan. Although this plan usually makes for easy access, and can be quickly executed in any given area, yet it cannot be successfully applied in a district which has marked topographical features. When applied to districts containing hills, bluffs, lakes or streams it is usually at an excessive cost, in the long run. It may necessitate a deep cut through a hill, or a huge fill, to make an easy grade. Whereas, if it had not been necessary to adhere strictly to the gridiron system, the hill or hollow could have been avoided by a slight detour.

Some cities avoid these difficulties by establishing the width of a street by the building lines, then, when the street is laid out the roadway width is determined by the amount of anticipated traffic, and, as traffic increases, the carriageway is widened. This method has proved wise in many instances. Yet here again there is the danger of needlessly sacrificing land for wide streets, land which may never be needed for them.

Width of Streets

In several cities careful studies have been made of the exact widths of all cars and vehicles used therein,

and, though results have varied, a general average has been determined upon. In the City of New York, for instance, the average width of all vehicles, from hub to hub, has been found to be very nearly six and a half feet, though of course many large motor trucks greatly exceed this. But the cost of operation of motor trucks, except in long hauls, has been shown to be so great that it is doubtful if this method of transporting goods will be very greatly used for some time to come, unless some method of greatly reducing the cost of short haul operation is discovered.

To determine the proper width for a street there must first be known, as nearly as may be, the number of lines of traffic to be expected on it in each direction simultaneously. When this is known, it is easy to determine how much street width is needed, the average width of each line of vehicles being known. For each line of vehicles a width of eight feet may be allowed, the difference between six and a half, the width of vehicles, and eight, being used to facilitate passing, turning corners, etc.

In like manner it has been found that a unit of ten feet can well be taken for each single line of trolley cars. Thus, in determining street widths, multiples of eight and ten feet can be used according to the number of lines of vehicular and trolley traffic to be accommodated.

For pedestrian traffic it has been found that a unit width of two feet is sufficient for one line of pedestrians, and sidewalk widths should therefore be laid down in multiples of two.

In the diagram on page 54 are shown three types of streets whose widths have been determined in this manner. "B" represents a minor residential street, used only by local residents and merchants' wagons. It seems sufficient to allow only twenty-four feet for the roadway. On this a vehicle can stand at each curb, and still permit another to pass in the center. A sidewalk width of six

feet seems enough, thus enabling three people to walk abreast. The width of the street, from building line to building line is one hundred feet and the surplus widths are so distributed as to create the best possible garden features.

Evolution of a Street

"A" represents what might be called a high-class residential street, upon which considerable traffic is expected. This width might also apply to a minor business street. The roadway width of forty-two feet permits four lines of vehicular traffic, and one line of trolley traffic; the trolley tracks being placed at one side to avoid vehicular interference, to leave a maximum for wheeled traffic and to make it more convenient for passengers to enter and alight from the cars. This street is also one hundred feet between building lines, the surplus widths again being used for landscape and garden effects.

"C" represents a typical intensively-used business highway. Here the whole hundred feet of width is put to use for travel of all kinds. The roadway width of sixty-eight feet permits three lines of vehicular travel in each direction, and two lines of trolley traffic. The sidewalk widths of sixteen feet permit eight lines of pedestrian travel in each direction, or sixteen lines all told.

In making streets, the eventual use of which is in doubt and present requirements are not great, it is advisable to establish building lines one hundred feet apart, as shown in the illustrations. The initial cost of this would not be great, and the final cost could be made to coincide with natural development. For strictly residential streets, probably always to remain such, it is not advisable to adopt a policy of this nature; unless abutting property holders desire it because of its possibilities for landscape and garden effects.

Dedication of a Street

The majority of all streets in this country were originally dedicated to their purpose by original owners of the land. This method of extending street systems has many serious defects. It results in short streets, non-continuous streets, poorly located streets, and, quite naturally, in narrow streets. Here the need of a rigid city plan becomes apparent. There should be in every city a body with power so to regulate the extension of the street system as to make all additions coincide and harmonize with all previously approved streets in their vicinity.

Widening Costs

Probably the most expensive of all street operations is the widening of old streets which have developed so much traffic as to make them no longer adequate to the demands made upon them. In the majority of cases, the first houses on streets of this nature stood well back from the street line. As business crept in, stores were built, and the city instead of compelling sidewalks to be placed nearer the houses, as it should have done, permitted new buildings to be erected near the sidewalk. That business and traffic are beginning rapidly to increase on any given street is commonly shown by the fact that buildings, heretofore well set back from the sidewalk, are moved forward. Then is plainly the time to establish a building line and move the sidewalk back, rather than to permit buildings to be moved forward.

Examples in Other Cities

In widening old streets no rule, strictly adhered to in one community, has proved successful in another. The method used most commonly in Europe is excess condemnation, and though several states in this country have laws enabling cities to employ it, none has yet taken advantage of it. This is probably due in part to the fact

that all have feared it would introduce harmful speculation into local politics.

Pennsylvania and Massachusetts are perhaps the leaders in this matter. Several years ago Philadelphia found it necessary to widen Chestnut street and the following law and ordinance were passed to make it possible:

"An Act.—Defining the line of Chestnut street in the city of Philadelphia, Section 1. Be it enacted * * * that the south line of Chestnut street, between the rivers Delaware and Schuylkill, shall be at the distance of 539 feet southward of the south side of Market street; **Provided, That this act shall not interfere with any buildings now erected on the south side of Chestnut street. Approved April 28, 1870."**

"An Ordinance.—To provide for the widening of Chestnut street on the City Plan: Section 1. The Select and Common Council of the city of Philadelphia do ordain that the Department of Surveys be and is hereby authorized to revise the City Plan so as to make Chestnut street from the Delaware River to the Schuylkill River of the width of sixty (60) feet, widening equally on both sides from the old center line. **Section 2.** After confirmation and establishment of said lines it shall not be lawful for any owner or builder to erect any new building or to rebuild or alter the front of any building now erected, without making it recede so as to conform to the lines established for a width of sixty (60) feet. **Approved, March 31, 1884."**

Subsequently two other streets were widened under similar ordinances. This indicates that the procedure was successful, at least to a degree, in the first instance. Probably this is the best example of the practical application of this principle in this country. Numerous instances may be found in both Paris and London in which such a procedure has been successfully carried out.

District of Columbia

The city of Washington, D. C., perhaps gives us the best example of wise forethought in the construction of its streets. When streets are there laid out a building line is established, and as it is not common practice to extend the roadway over the whole area allotted to the street, the excess portions are equally divided on either side, and the use of same given to the abutting property owners, as if those parts of the street belonged to them in fee simple, until such time as the business of the street warrants its widening to the building lines originally established. As the business of the street increases, up to the time when it is widened, property owners may use that portion of the excess width which is in front of their property in any manner they see fit. For instance, storekeepers sometimes extend the sidewalk back to their buildings, build an awning over it and use it for business; while others use the space for garden purposes or simply as a lawn. This method of street widening is far cheaper and more effective than that of allowing buildings to be erected near, or back from the street line as abutting owners choose, until its traffic is greater than its width can well accommodate.

Under this latter method it often becomes necessary to establish a new building line, some distance behind the former one, and fix a time limit when buildings shall be moved back to it. By placing a time limit the city is not at once burdened with large financial expenditure, and improvements take their course at the convenience of property holders. If, before the expiration of the time limit, the city wishes to complete the project, it finds it much cheaper to condemn only the structures not already moved back, than it would have been to condemn them all at first.

The Zone System

From the preceding remarks, outlining the experience of other cities, can be drawn profitable suggestions for Newark. In planning streets it is plain that main traffic highways should be determined at the earliest possible moment, and so developed as to form a skeleton structure upon which the city shall be built as it expands. Then should be located the several zones of activity; the business zone, the commercial zone, the manufacturing zone, the residential zone, etc.

It is of course impossible to build walls around certain sections of a city and say, "We will put all business activities here, and all industrial activities there." It is possible, however, to determine these several zones in advance in a general way. Where cities are already built and the zones established, allowance must be made for growth by forecasting future requirements as closely as possible. Once these requirements have been met as fully as conditions permit, the street system in each zone should be laid out according to the traffic which may be expected in it.

Suburban Thoroughfares

The structural frame of Newark's street system is unquestionably good, and if study is made along lines here suggested the best and most requisite improvements can be discovered. The main traffic highways and suburban thoroughfares are Frelinghuysen Avenue, Elizabeth Avenue, Clinton Avenue, Springfield Avenue, South Orange Avenue, Central Avenue, Orange Street, Bloomfield Avenue, Belleville and Washington Avenues and Market Street and its connections with the Plank Road. Each of these thoroughfares leads to suburban territory, and each has all the essential requirements of directness and sufficient width. Each serves its purpose admirably, and there will probably be little necessity of other like arterial highways,

except in the undeveloped meadow district where provision for them can well be made in advance.

Crosstown Highways—East and West

The main east-and-west crosstown thoroughfares are Park Avenue and its connections, Orange Street, Central Avenue, Market Street and its connections, William Street and its connections, Eighteenth Avenue and others which are not in themselves complete. It will be seen at once that none of these streets complete an entire, through, crosstown highway, although the connections with many of them form crosstown streets which are used to great advantage. The make-up of Newark is such as to prohibit good east and west crosstown thoroughfares, partly because of its irregular topography and partly because of undeveloped sections, and artificial barriers in the form of railroad embankments. On the completion of Diagonal Street a good east-and-west thoroughfare will have been established by way of Central Avenue, Diagonal Street and Market Street or Ferry Street. North of Central Avenue there is little need of a through east-and-west street other than those already provided, for the present at least. In the suggestions offered in Chapter I, the widening of Lafayette Street would form an admirable east and west crosstown thoroughfare. South Street, connected with Spruce Street, would form another. South of this point so much depends upon the manner in which the meadow district is developed, as to make it impossible to determine at present the best through highways. Those which it would seem most advisable to extend are Alpine Street, Peddie Street and Chancellor Avenue.

Crosstown Highways—North and South

The most important north and south crosstown thoroughfares are Tyler Street, Mulberry Street, Broad Street, Washington Street and Frelinghuysen Avenue, Bel-

mont Avenue and its connections with Norfolk Street and Clifton Avenue, Bergen Street and South Tenth Street. Few of these streets are in any sense completely developed. Tyler Street, for instance, is a comparatively short street, though it now handles much traffic. Its future depends on the development of the meadow area. It should be connected directly with Jackson Street bridge. Mulberry Street is another thoroughfare which, though not essentially crosstown may grow into such on the development of the territory which lies at its southern extremity. Broad Street is Newark's largest crosstown thoroughfare. It probably will not be extended further south, being blocked by the railroad in that direction.

Washington Street and Frelinghuysen Avenue will constitute, if properly connected, one of Newark's finest highways, aesthetically and commercially.

Belmont Avenue, if wisely connected with Norfolk Street, has the requirements of a magnificent highway. It runs through a thickly populated section and is so far from the commercial center of the city as to be able to develop a business center of its own. The same is true of Bergen Street. In the development of these two streets lie great advantages, both to their own immediate localities and to the whole city.

West of Bergen Street there should be at least one good crosstown thoroughfare to meet the needs that will surely arise. A glance at the map of Newark indicates that South Tenth Street is the one which should be so developed. Its connections on the north and south are very bad. They could be bettered, however, much more easily now than later, and such betterment is strongly recommended.

Conclusion

These crosstown thoroughfares constitute the structural framework of our street system. Our future city is

to be built upon them. Let us bear this in mind continually and so shape our ends as to make them commensurate with our needs. To do this we must take each of these streets and treat it individually. We must not say "Is this not a fine street? See its large buildings, the great traffic it now accommodates, its fine pavement!"

Rather, we should ask, "Is this street going to serve its purpose 50 years hence? Is it sufficiently wide? Are its connections with other large streets sufficiently good? In other words, does this street, beautiful as it now is, meet all the needs of a street of its character?"

It is evident, in answer to these questions, that William Street, Central Avenue, Eighteenth Avenue, Washington Street, Tyler Street, Belmont Avenue and South Tenth Street do not meet the requirements their very existence compels them to have. Lack of proper connections, lack of continuity, is the predominant evil. Specific recommendations covering these streets are found in Chapter I.

Another bad feature of these streets, sure to become more evident with time, is insufficient width. The bad results of narrowness have been noted elsewhere. Plainly, in the future highways of this city, widths of 90 or 100 feet will never be too great. Washington Street, Belmont Avenue, Bergen Street, South Tenth Street, Tyler Street, William Street, Lafayette Street, and a portion of Central Avenues should all be made 90 or 100 feet wide. Study should be made as to how these widenings can best be accomplished, particularly with reference to the establishment of building lines back of present ones and a time limit set within which all buildings must recede to the new line.

CHAPTER IV.

HARBOR DEVELOPMENT

I. A Broad Plan and a State Commission

The Port of New York, the World's Industrial Center

Industries locate where they can get best transportation facilities, and are nearest to large markets of supplies and of labor and large groups of consumers. In and about New York are found the greatest storehouse of supplies on the American continent, the greatest number of purchasers and consumers, and the greatest supply of labor. At New York Harbor meet the principal water and land transportation lines of the world. Regular sailings to all parts of the world are made from here, and here all the railroad companies of North America have either their tide water terminals, or maintain a service through connecting roads or coastwise steamship lines.

The following appears in the 1912 Report of the Chamber of Commerce of New York:

"With five per cent. of the population of the country, the city of New York has nearly ten per cent. of the industrial establishments of the country; while the value of its products is almost ten per cent. of the nation's. The added value in New York is nearly eleven per cent. of the country's.

"The four largest manufacturing cities in the United States next to New York are Chicago, Philadelphia, St. Louis and Cleveland, and they are making gratifying gains; and yet * * * in number of industrial establishments New York is bigger than all four put together, while in number of wage earners and in value of products this city stands not far from the other four cities combined."

Industrial Disadvantages of Manhattan and Long Island

Industries have come to New York for the reason that it is the great American market of labor and supplies, and is the principal point of trans-shipment of commodities between land and water carriers. They have come here for those reasons, in spite of the fact that in New York direct rail connections for freight are lacking, and that nearly all raw materials and finished products are subject to cost of drayage and lighterage in addition to the ordinary rail and water transportation charges.

Naturally the most desirable frontage in the New York portion of the harbor has been taken up by railroads and steamship lines, and additional docking accommodations are much in demand. Industrial establishments have in recent years located in outlying boroughs, and particularly in that section of Brooklyn where large terminal companies have built modern factory buildings so connected with the water front as to handle commodities between factory buildings and points of destination.

Nearly all freight shipped from New York by rail is subject to lighterage cost, and while this may be absorbed by transportation companies in their through freight rates, it still is there and must be included in the price paid by the consumer.

Advantages of New Jersey's Part of the World's Great Port

The New Jersey shore, bordering on New York Harbor, has the advantage of rail and car terminals of trans-continental lines already located there. If proper organization of water front and back lands was effected, this New Jersey area would outrank all other sections in its commercial and industrial possibilities. New Jersey has never attempted harbor development, and New York City has thus far absorbed nearly all the advantages which come from its location on the greatest harbor in the world.

The Special Claims of Newark and Elizabeth Meadows

The shores of Newark Bay have great commercial and industrial possibilities, but no attempt should be made to develop them for large passenger steamship trade. Freight trade is of far more advantage to any community than passenger trade.

Newark Bay development should not be attempted by or for any one community. Such development does not affect Newark only. It concerns all communities in the New Jersey district of New York Harbor, and includes those on the Hackensack and Passaic Rivers as well as those immediately on the bay. A general plan should be prepared that will include so much territory as is essential to a complete and comprehensive scheme.

The map shows that the quadrangle, bounded on the northwest by the Pennsylvania main line New York division, on the northeast by the Lehigh Valley and Pennsylvania line to Greenville, on the southeast by Newark Bay, on the southwest by the Jersey Central main line, should, together with the opposite shore of the bay, be considered as one complete section of the whole port district. The commercial and industrial development of the section must affect, as already noted, all surrounding communities, including Newark, Elizabeth, Jersey City and Bayonne; and in that development provision should be made to handle freight for the benefit of communities lying along the shores of the Hackensack and Passaic Rivers.

Facts to be Kept in Mind Concerning Bay and Meadow Development

New York is the greatest commercial and industrial center on this continent.

Nearly all its land commerce with the west is interrupted at its door by the Hudson River, and has to bear a

heavy charge for transfer from railroad terminals in New Jersey.

Its docking facilities are relatively limited and can be extended but little and only at considerable cost.

Docking facilities developed toward the east, on the Long Island shore, have the great disadvantage of being still more widely separated by water from existing railroad terminals in New Jersey than are those in New York proper.

Land near New York suited to manufacturing industries will be more and more sought for. The rapid growth of this whole region in population and industries is assured. That population and those industries are now so great that the increase alone, in the next ten years, will be 250,000 in the former and \$180,000,000 (value of products) in the latter.

Near New York no land now unoccupied can offer such advantages for factories and warehouses as could that surrounding Newark Bay, were it properly developed.

All but two of the great American railway systems—the New York Central and the New England group—have terminals of their own or of their connecting roads on or near the shores of this bay and all can be easily connected by a belt line. Two large rivers enter the bay and carry a considerable commerce.

Despite lack of development, the tonnage of the Kill van Kull for 1911 was 13,546,544, or only slightly less than the commercial tonnage of the Suez Canal for the same year.

This development should be primarily for industrial purposes—factories and warehouses.

But, along with this preparation for factory and warehouse sites should go, at a proper rate to meet all needs as they arise, preparation for transport by land and water, and, especially, for easy transfer between the two.

This preparation should keep in view not one community only, but all the communities affected by it. It should be a North-East-New-Jersey and New-York-Harbor plan and not a Newark plan.

**The Work Should be Treated as One of a Community
of Interests**

The many interests here involved, including those of Newark, Elizabeth, Bayonne and Jersey City; of railroads, steamship lines, public service corporations, transfer companies, manufacturers, land owners, and the general public can be compelled to unite for the good of all only through the interposition of the State government.

It is evident, therefore, that a Commission is needed, with power to lay out plans for the proper development of great areas ready for that development, and with power to compel private individuals and public and private corporations within the given area to conform to the plans which may be laid down, when duly advertised, and duly adjudicated as to grievances. This is the method adopted in Massachusetts for the proper control of the development of the metropolitan area of Boston.

The course of procedure of such a State commission as regards the bay and meadow problem might be somewhat as follows:

Such Commission should secure the aid of the federal government in removing obstructions to navigation at the lower end of the bay, including Bergen Point Light, the rocks between it and the new pierhead line, and Shooter's Island; and in dredging a large basin, and, later, dredging a channel, as needed, along the newly established pierhead line on the west side of the bay. Also it would insist that the present low bridge of the Jersey Central be so elevated as to provide at least 24 feet clearance. This has been advocated for many years.

Meanwhile it would lay out a scheme of development for the bay shore on both sides and for the meadow area and would compel all development thereafter to conform thereto, but only just in advance of needs clearly foreseen. Thus no time or money would be wasted, and industrial sites and proper railroad and water connections therefor would be offered for use as rapidly as the demand appeared.

Two Fundamentals

The broad facts that this Commission seeks to emphasize are two:

First—That, properly developed, the meadows will offer more advantageously situated factory and warehouse sites in the next twenty-five years (while the area within a radius of twelve miles is increasing its population by 25,000 per year and the value of its manufactured product by \$18,000,000 per year) than can any other spot in the United States.

And, second—That proper development can be carried out only under the direction of a State authority which recognizes the common interests of all the communities affected by the developments.

II. Newark Bay Port District

At a meeting of interested citizens from Newark, Elizabeth, Bayonne and Jersey City, held at the Board of Trade rooms in Newark on January 7, 1914, the outline of a bill for the appointment of a commission with State power with authority to prepare and carry out a comprehensive scheme for the development of the Newark Bay district was presented, discussed and unanimously approved.

The bill provides for a commission of twelve members, three from each of the cities above named. They will form a perpetual body politic and corporate with the usual powers. They will lay out development plans for

the area in question. These they will submit to each city for approval by the electorate thereof. The plans as approved shall be carried out by the commission, at the cost of the several cities, and pro rata according to their respective assessed valuations.

As improvements are made the commission will assess benefits on the adjacent lands. They will make harbor regulations; acquire land by gift, purchase or condemnation; apportion revenues and make leases.

The Commission plan here outlined is quite in accordance with the scheme which this Commission, as stated above, believes to be the proper one.

Indeed it may be said that for ten years and more every competent person who has carefully examined this question has come to this same conclusion, that the development of the whole Newark Bay District should be treated as one problem, not by one city only but by all the cities concerned in it, and under the direction of a body duly appointed and armed with State authority.

No Detailed Suggestions Offered

It is plain that the details of the scheme of development which a State commission may most wisely follow must be left for that commission to determine.

The map here given, therefore, shows only present developments, the new pierhead and bulkhead lines, and, as previously noted, suggests, by their absence, the removal of certain obstacles to navigation at the foot of the bay.

III. If Treated as a Newark Problem Only

If it proves impossible to secure the passage of a law under which a State commission may direct the commercial and industrial development of great areas like that which borders on Newark Bay, all as suggested earlier in this chapter, and if Newark insists on carrying out alone its own work within its own area only, then this Commission urges that the work be done, substantially in accord-

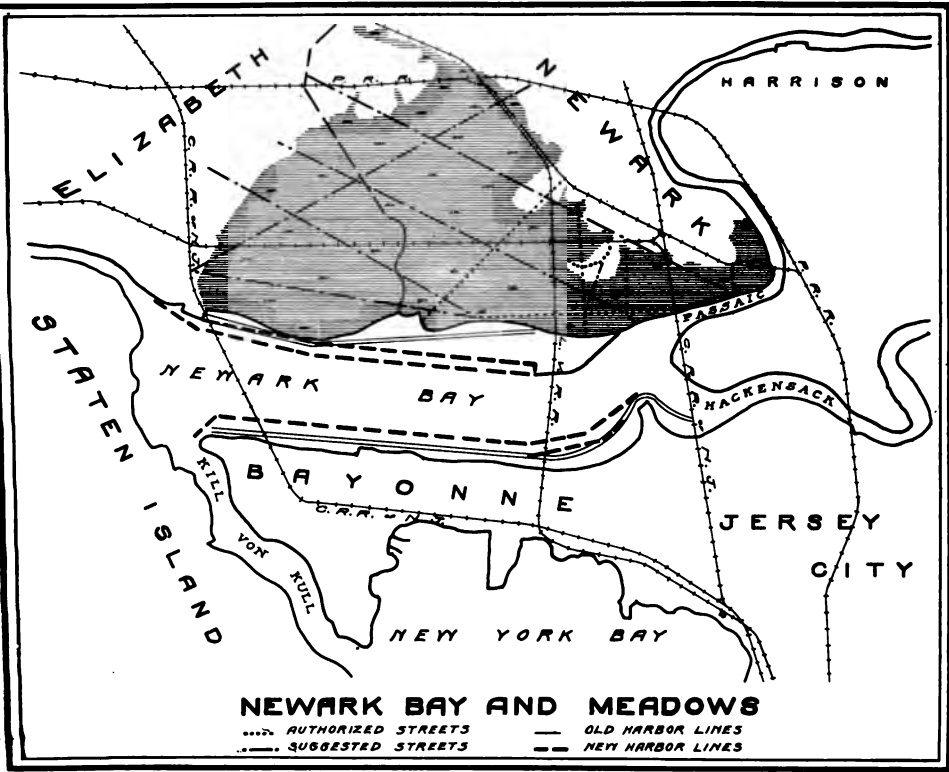


PLATE XXIV.

ance with the suggestions offered in Part I. of this chapter, and somewhat as follows:

Induce the federal authorities to remove obstructions at the entrance of the bay.

Make sure that the New Jersey Central's low bridge will be rebuilt on piers and so elevated as to give at least 24 feet clearance.

Induce the federal authorities to dredge a channel along the new pierhead line, as rapidly as needed.

Supervise dock development along the Passaic; see to it that dockage facilities are always in advance of demand, as they now are, and put improvements where needed and as needed.

Extend streets on the meadows in such a manner as to invite construction on them of factories and warehouses.

Fill meadows near city and along needed streets with city refuse.

Carry a wide street from Frelinghuysen avenue over the half-developed area along the northern junction of unused marsh and existing buildings and on to the Plank Road.

Extend Avenue R to the southern boundary of the city, first endeavoring to secure from Elizabeth an agreement to meet the same with a street extended north.

Fill land along river and bay with channel dredgings and with refuse from other sources as opportunity offers.

When more dock facilities are needed add them first along the lower reaches of the Passaic, and not several miles away from the city proper on the bay shore.

IV. Newark's Present Plans

In contrast to the suggestions heretofore made we present the following brief statement of the plans laid down by the Board of Street and Water Commissioners of Newark for an independent development, for Newark

only, of a portion of the meadows and of the bay shore, and of the progress thus far made therein.

Some seven years ago the Board of Street and Water Commissioners of the City of Newark engaged the services of a Board of Consulting Engineers to report upon a plan for meadow and harbor development. This board reported in favor of the now well-known inland canal scheme. It suggested that the city purchase a tract of meadow land, having a frontage of 4,000 feet on Newark Bay and extending inland very nearly to the main line of the Pennsylvania Railroad. The Peddie Street ditch runs through the center of this tract.

The proposed canal, 700 feet wide and 12,000 feet long, was to be built through the center of this tract, opening at its inner end into a large basin, 2,000 feet wide and about 5,000 feet long. The excavated material from canal and basin, it was estimated, would serve as fill for the entire tract to be purchased. A detailed plan was submitted, which showed a street system, railroad sidings, public wharves, bulkheads, etc. Estimates on costs for excavation and fill and bulkhead construction were also included in the general plan.

Although the Board in question has never undertaken the execution of this scheme as a whole, it has, from time to time, acquired property within this area known as the canal zone. It now owns probably 50% of the entire zone. A large portion of the purchased land lies east of the Central Railroad's tracks. For the purchase of this property \$400,000 has been spent of the \$2,000,000 made available by legislative enactment.

The canal scheme has not in general been looked upon favorably. The principal objections to it are: (1) It is not needed, there being as yet no demand for land on water front which is not met by that lying along the Passaic on deep water secured without cost by the federal government. (2) Distance from the city. (3) Obstruc-

tion formed by the Central Railroad's bridge. (4) High cost of pumping and filling. (5) Probability of ice in a dead-end canal. (6) Lack of sanitary flushing possibilities. (7) Long wait before any returns can be received from investment. (8) Only a small part of the large meadow area would be developed and the digging of other canals would be necessary, all to the detriment of a comprehensive plan for meadow and harbor development.

The Board in question has very recently published a new plan for meadow development. It follows the lines of the canal scheme. It proposes to build a crib and fill in an area of about 100 acres, shown on the map as Plot 1, with pumpings of government dredges now working in Newark Bay, and to dig a channel, 200 feet wide, from deep water in Newark Bay to this plot, and along the south side of it, as shown on the map. From the pumpings of this channel it proposes to fill Plot 2. Thus will be created a bit of dry land to which additions can be made as called for. Docks 1,200 feet long are to be built out from Plot 1. Extensions of Bay Avenue and Avenue R are to form connections between this area and the city proper.

This plan can be adapted to the original canal scheme if desirable, the latter, however, being postponed for the present. The Board wishes to develop as quickly as possible the land now in the city's possession.

An obvious objection to this scheme is its great distance—two miles—from present-day Newark, with no residence sites nearby and no transit facilities by which workers can go to and from their homes. Moreover, it affects one community only, and is not a broad, comprehensive plan of harbor development.

V. Newark's Industrial Growth**Newark Manufactures**

1676—First Shoemaker.

1682—Much Cider.

1689—First Tannery.

1803—Large Shoe Manufacturers.

Year.	Plants.	Employees.	Total Population.	Per Cent. of Population Employed in Manufacturing.
1830	80	3,179		
1835	163	5,587		
		(Panic, 1837.)		
1840			17,290	
1850			38,894	
1860	730	21,638	71,941	30
		(1862-1865, War.)		
1870	1,131	22,126	105,542	21
		(1872, Financial Depression.)		
1880	1,291	41,510	136,508	30
1890	2,490	46,848	181,830	26
1900	3,389	49,450	246,070	20
1906		50,697	290,000	17.5
1909	1,858	59,995	347,469	17.3
	Wages	Per Employee	Value of Product.	Per Capita.
1835			\$ 7,924,760	
1840			5,350,558	\$310
1860	\$ 6,117,952	\$283	25,098,000	350
1870	11,537,270	522	48,133,303	456
1880	14,748,388	354	66,985,766	490
1890	26,857,170	574	93,476,652	515
1900	29,534,311	596	126,954,049	515
1906	25,621,626	506	150,055,227	520
1909			202,511,000	581

Curves can be drawn, based on these figures, and these can be projected to give estimates for the future. Such curves show that the number of plants steadily increased until the last decade, when a slight decline took place. A

similar falling off is noted in total wages of employees. The number of employees, however, increased, as did also the value of the output per capita. If the line representing employees be projected for the future, we get an estimate of 100,000 industrial workers in 1950. With the present rate of growth, the total population curve indicates about 1,000,000 in 1940.

Insurance maps which note different types of structures and distinguish factories from tenements and dwellings, give further evidence of Newark's industrial character. These maps show industrial establishments quite uniformly distributed through the city, with a tendency to group in the vicinity of railroads, canal, river front and bay shore.

Building Construction

This table, from reports of Superintendent of Buildings, for 1907-1911 inclusive, shows storage buildings, factories and alterations in each ward for each year mentioned. Note the large amount of work in the 10th and 12th, or meadow, wards.

Storage Buildings

Wards	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total.
1907	4	5	5	3	4	4	7	5	7	20	4	9	5	12	2	5	101
1908	4	7	2	2	5	3	3	9	5	13	3	12	2	4	0	4	80
1909	4	6	6	5	8	4	2	8	10	14	4	27	5	3	0	3	108
1910	4	5	6	5	3	1	3	9	6	20	5	15	2	4	3	8	99
1911	3	4	3	8	7	2	3	8	8	18	5	24	6	7	2	7	125

Factories and Alterations

Wards	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total.
1907	2	2	1	5	13	3	0	5	8	14	6	20	5	8	0	1	93
1908	3	6	1	12	6	1	6	7	7	14	2	19	2	2	0	5	93
1909	1	14	3	8	8	3	8	6	14	41	9	30	3	6	3	6	163
1910	8	8	5	15	14	2	10	12	17	36	12	20	5	5	1	5	175
1911	4	5	3	12	15	2	7	6	13	34	7	24	3	4	0	4	143

Maps

This Commission has made studies of the locations of industries in Newark. Maps have been made based on

these studies. One shows the rate at which the meadow line has been gradually pushed toward the bay. Another shows how much the waterfront has been developed in fifty years, chiefly along the Passaic River.

VI. Newark Commerce

The annual report of the Chief of Engineers of the Army, for 1911, states that "The commerce of the Passaic is mainly in building material, iron ore, fertilizers, coal and general merchandise." In the same report is this tabulated list of freight traffic for 1910:

Newark Bay and Passaic River Freight

TRAFFIC YEAR 1910.

	Amount Customary Unit	Amount Short Tons	Valuation
Ale and Beer.....		14,850	\$1,292,000
Brick	269,862 M	390,804	1,047,760
Candles and Tallow....	9,500,000 bbls.	4,750	660,000
Cement, Plaster, etc....	86,102 long tons	96,435	1,154,387
Chemicals and Colors	46,309 long tons	51,906	4,855,393
Coal	139,605 long tons	171,004	535,779
Fertilizer	52,237 long tons	58,506	806,390
Fish and Shellfish.....	68,640 baskets	1,716	61,776
Machinery and Manufactures.....	22 long tons	25	14,400
Grain	611,054 bushels	16,804	608,425
Ice	30,000 long tons	33,600	67,200
Oils	28,540,257 gals.	101,103	880,476
Ores and Metals.....	100,258 long tons	112,289	26,103,333
Paving Blocks.....	3,083 long tons	3,454	40,403
Sand and Stone.....	384,596 long tons	430,745	827,259
	11,500,000 lath		
Lumber	127,689 ft.b.m.	244,464	2,547,814
General Mdse.....	390,785,000 lbs.	195,392	18,400,135
To and from Hacken- sack River	280,583 long tons	314,256	1,623,242
		<u>2,266,291</u>	<u>\$62,216,587</u>

Passaic River at Nairn Linoleum Works.

Brick	83,000 M	17,080	\$ 70,062
Coal	53,983 long tons	60,460	259,000
Chemicals and Colors	6,641 long tons	7,477	383,385
Lumber	52,356 M ft.b.m.	84,846	330,141
Oils	3,000 bbls.	1,500	45,000
Ores and Metals.....	150 long tons	168	2,325
Stone and Sand.....	75,414 long tons	84,464	145,020
Miscellaneous	818 long tons	916	8,300
		256,911	\$1,233,233

Aside from building materials and coal, with a small amount of general merchandise transferred between Newark and Greater New York, this commerce is material going to or coming from Newark's factories. Such commerce is of much more profit to a community than foreign trade. It feeds industrial enterprises, which give employment to hundreds of people; whereas the number of employees needed to handle cargoes of foreign commerce is very small, and largely out of proportion to amount of space taken and money invested. Warehouse industries occupy large land areas, but employ little labor. The proximity of Newark to New York, with the latter's gigantic commerce touching all points in the world, makes greatly for Newark's pre-eminence as an industrial centre. She can secure greater efficiency and higher returns by catering to manufacturing than she can by promoting water-borne commerce.

VII. Foreign Examples of Industrial Foresight**German Ports—Emden**

Nearly all German ports are making appropriations for the acquisition and development of industrial water fronts. Thus the little city of Emden, with a population of only 16,453, is setting aside a water front site of 1,236 acres for industrial works, "which will develop in the

course of time." \$1,812,500 has been spent upon the harbor and an expenditure of \$3,750,000 is contemplated for the completion of the new project.

German Ports—Bremerhaven

The town of Bremerhaven, with a population of only 20,322, has already spent \$16,000,000 on the port facilities now in existence, with an annual cost for maintenance and operation of \$250,000. The present harbor has become insufficient, and a plan of improvement, covering a period of fifty years, has been drawn up. The proposed schemes are to be carried out in two sections, the estimated cost being \$12,875,000 for the first and \$14,250,000 for the second.

These ports are looking into the far future and are alive to results which accrue from liberal expenditures for industrial water front development.

German Ports—Hamburg

Hamburg, a city of 705,738 inhabitants, has undertaken an immediate expenditure of \$8,640,000 for the improvement of its harbor and for extensions which will call for the expenditure of \$11,275,000 later.

Edwin J. Clapp, in his "Port of Hamburg," says:

"Germany is fast becoming a typical industrial country; that is, a country engaged in importing of raw materials of industry and food stuffs for supporting its manufactured products."

"The interest of Hamburg in this development is apparent, when we consider that Hamburg's natural and immediate-interland is the seat of the beet sugar industry, intensive farming and cattle raising, and that Germany's potash deposits lie on the banks of the Elbe, and on the Saale, its tributary. On the Elbe and its connecting waterways are such manufacturing centers as Madgeburg and Dresden, Berlin and Breslau—and back of the latter the Silesian industrial district. The Saxon industrial district finds in Hamburg its natural outlet. The industries of Westphalia are brought within Hamburg's sphere of influence by favorable railway tariffs. The result has been that Hamburg's commerce by sea has increased even more rapidly than Germany's

population and Germany's foreign trade; *i. e.*, that Hamburg handles a continually larger portion of that foreign trade."

As has been stated repeatedly, Newark is eminently an industrial community with hinterland behind it showing high industrial development. Paterson is a particularly well-known example of such hinterland development, and a city often cited in industrial discussions. Newark can well afford to take a lesson from the older communities in Europe, which have had centuries of experience from which to learn what will produce the most results in the way of municipal efficiency, and are not afraid to undertake obligations which can come to fruition only in the distant future.

German Ports—Lubeck

Lubeck, another German city of 82,089 inhabitants, has expended \$2,164,650 for improvement of the Trave, besides dredging operations amounting to \$50,000 or \$60,000 per year. Quoting from a German report:

"The cost of the construction of the free harbor, including those of the quay equipment and sheds, the lines of rails, roadways, etc., is estimated at \$5,500,000.

"The cost of making the second basin will be about the same"

"The carrying out of the rest of the design depends on the requirements which the industries now established or in future to be developed may make.

"The quicker the rise of the trade of Lubeck and of her still youthful industries, the more rapid will be the progress made in carrying out the rest of the design."

The italics are here inserted to indicate the foresight with which these problems are being approached.

French Ports

In like manner the French have undertaken to develop their ports by large expenditures, as shown in the following quotations:

"The incessant development of traffic in the maritime ports

necessitates the construction of works according to the fresh requirements as and when they occur."

"If in France this development is perhaps not so rapid as in certain other countries more favorably situated, it has, nevertheless, attained, during these latter years, figures hitherto almost unknown, and this is why serious efforts have been made since 1907 to cope with these requirements."

Newark and Foreign Ports

One must be impressed by the large sums which the European cities are spending in port development. Their past experience has proven the wisdom of such programs, and they are now looking far into the future—as far as fifty years in some instances.

It should further be noted that these municipalities acquired land when it was cheap and carried out the design when requirements dictated, as industry and commerce developed.

Port of Portland, Oregon

Communities bordering on Newark Bay could, as suggested in Part I. of this chapter, well follow the lead of certain northwestern states, where laws have been passed providing for the establishment of commissions to care for the development of harbors, waterways and general maritime commercial undertakings. Such, for example, is the "Port of Portland," which was incorporated and given powers covering the raising and expenditure of money for improvement of navigation and fostering navigation interests between the Pacific Ocean and the City of Portland, Oregon. This "Port of Portland" Commission has expended in dredging operations about as much money as has the United States Government in that vicinity. The "Port" now owns and operates a floating dry dock, and has charge of all pilotage between the ocean and the commercial harbor.

VIII. Federal Improvements of Newark Waterways

Heretofore, throughout the United States, the Federal Government has been depended upon for the development of waterways to accommodate water commerce. The Federal Government has dredged channels, removed bars, constructed breakwaters, and has fostered the development of the maritime business of the country.

But many municipalities are now learning that their interests are tied up with maritime commerce and are joining the Federal Government in financing improvements which will contribute to their prosperity. Thus, the Port of Portland, Orégon, has spent nearly as much as has the United States Government in the dredging of the Columbia and Willamette Rivers; and the arrangement under which Jamaica Bay is being developed as a harbor is by joint expenditures by the Port of the City of New York and the Washington authorities.

Bay and River Improvements

The Government has undertaken five projects for the improvement of navigation in Newark Bay and the Passaic River, as stated in the Annual Report of the Chief of Engineers of the United States Army (1911-1912).

The first project, authorized by the river and harbor act of 1872, provided for the construction and maintenance of a channel from Newark to Passaic, from 6 to 7½ feet deep and from 50 to 200 feet wide. When this law was passed there was a navigable passage seven feet deep to Newark, and three feet deep from Newark to Passaic. The first project is now complete, there being a channel 100 feet wide and 6 feet deep to Passaic. The cost of this improvement, to June 30, 1911, was \$222,466.65, including maintenance of \$5,000 annually.

The second project, provided for in the river and harbor act of 1880, was for a channel 200 feet wide and 10

feet deep up to Center Street Bridge in Newark. This project is now complete, a total of \$512,293.19 having been spent to June 30, 1911.

The third project, provided for in the river and harbor act of 1902, was for a channel from Staten Island Sound to the Montclair and Greenwood Lake Railroad Bridge, a distance of 10.8 miles, the channel to be 200 feet wide, with a depth of 12 feet to the Nairn Linoleum Works, and 10 feet from that point to the railroad bridge. This project is now complete, having cost \$301,467.75 to June 30, 1911.

The fourth project, provided for in the river and harbor act of 1907, was for a channel 300 feet wide and 16 feet deep from deep water in Newark Bay to the Nairn Linoleum Works, 200 feet wide and 16 feet deep from the latter to the Montclair and Greenwood Lake Railroad Bridge. This project is now nearing completion, \$461,544 having been spent to June 30, 1911, of \$850,000 provided.

The fifth and last project, provided for in the river and harbor act of 1912, is for a channel 300 feet wide and 20 feet deep from deep water in Newark Bay to the Montclair and Greenwood Lake Railroad Bridge. \$1,065,000 was authorized for the completion of this work. The contract was awarded and the work has been under way since October 1, 1913. The spoil taken out of the channel is being pumped into adjacent meadows, thus accomplishing a double benefit in the deepening of the channel and in the reclamation of land.

All depths in these projects are considered from mean low water, there being a tidal range of 4.7 feet at the mouth of the river.

Why should Newark not supplement the work being done by the Federal Government and thus increase, and soon, her commercial facilities?

IX. Newark's Deep-Water Front: Ample for the Present Harbor Front

Within the corporate boundaries of Newark is a river and bay frontage of 73,468 feet, as follows:

Harbor Front, Newark, N. J.

Use.	Length, Feet.	Per Cent. of Total.
Improved and Used.....	18,193	25
Improved, but Idle.....	1,475	2
Unimproved	53,800	73
Total	73,468	100

(13.9 miles.)

The water front divides itself into three types. The first is that on Newark Bay. A natural limit to this section at the north is the bridge of the Newark branch of the Central Railroad.

A second type is that on the Passaic River, divided into two classes. The lower and "commercial," from the Central Railroad westerly and northerly approximately to Mount Pleasant Cemetery, has been developed for commercial use, and will be further developed. North of the cemetery the river is well adapted for park and recreational purposes. The disposition of the latter can more properly be discussed in connection with the general park system of the city.

The commercial section, developed like other river ports, is lined chiefly with old timber bulkheads, which constitute more or less of a fire menace. A municipal body should be constituted with power to regulate all reconstruction along the water front. In this way a more aesthetic and efficient frontage could be developed and a proper municipal policy carried out. It might be advisable to extend the authority of this body to street lines, etc., at certain distances back from the bulkhead lines.

CHAPTER V.

THE MARKET PROBLEM

Centre Market—Present Conditions

The question of proper market facilities has recently aroused much interest in Newark, as well as in other cities, and many suggestions have been made concerning it. Centre Market now consists of a long, one-story building with a central aisle, on either side of which are retail stalls. The Morris Canal runs under the building for its whole length. Next to this structure, on the south, is an open plaza, of about 64,000 square feet, paved with granite block, used as a farmer's market. Across this plaza islands about 10 feet in width are placed at 50-foot intervals. Surrounding the farmer's market and on a few adjacent streets are stores of commission merchants.

During the summer and fall, farmers' wagons come to the market each morning, beginning about 1 A. M., back up to the islands and display their contents. During winter and spring these farmers' markets are held on three days only of each week. About 2 A. M. trucks of commission merchants begin to arrive from railroad freight terminals, laden with produce just received, and shortly thereafter come the wagons of local retail dealers.

The retailers buy their supplies at will from both farmers and commission merchants. The latter naturally have the larger variety, and do not as a rule compete with the farmers. The goods of the commission merchants are largely secured by direct consignment from distant points. Instances of their buying from farmers have been observed, though rarely. One end of the retail building faces Broad Street, the busiest thoroughfare in town. It is about 800 feet from the city's present commercial and traffic center. The estimated value of the entire property is about \$2,000,000.

Abolition of Retail Market

Other large cities, both in this country and abroad, find that retail markets are outliving their usefulness.

This Commission, on September 4, 1912, submitted to the Mayor and Common Council a report giving the results of an exhaustive study of Newark's food supply. It recommended that the present retail market be abolished, that the valuable plot it occupies be sold, and that with the proceeds a wholesale auction market be established in the south end of the city.

Several reasons were noted for giving up the present site. The City Auditor's report gives an annual profit on market operation of \$33,000. An analysis of the figures shows that this is \$7,000 short of the interest on an investment of \$1,000,000, the assessed value of the present site. If the plot were sold, the city would receive \$20,000 a year in taxes paid on it by its new owners. As the property is very valuable for business purposes it would undoubtedly soon be covered with a million-dollar office building. From this would come another \$20,000 in taxes. Upon the removal of the market, surrounding properties would so rise in value as to return in taxes at least another \$20,000. Add these four items and it appears that the city, instead of making money on the market, loses thereby \$60,000 to \$70,000 per year.

The Present Site

The market is a nuisance because of the noise, smell, clutter, congestion of teaming and general unsanitary conditions that attend it. The site is without railroad connections or even a possibility of them, though these are most essential to a successful market. It now costs \$10 to \$15 per carload to bring foodstuffs from the railway freight terminals. This is a most unnecessary addition to the high cost of living. The present site is

very crowded and there is no possibility of acquiring more land for growth. Counts of patrons show that the market serves an average of less than 4% of the population.

Wholesale Market

The report further recommended that the retail market be abolished because produce is no cheaper and no fresher there than elsewhere, though the two strongest arguments in favor of retail markets are that they supply a community with fresher and cheaper produce than do other agencies. In place of a retail market the report suggested a wholesale market, where auctions could be held and produce sold directly from cars to retailer, thereby eliminating one transportation charge.

It was found that about 70% of all produce comes into Newark, during the summer months, by way of railroads, and 80% to 90% during the rest of the year. From 65% to 75% of this total comes in at the Pennsylvania freight yard, 15% at the Central freight yard, the remainder being divided between the D., L. and W. and the Erie.

The report said that in view of the success of wholesale auction markets in other cities it seems wise to establish one in Newark, and to locate it as near as possible to the point where the greater part of produce enters the city. If placed east of the Pennsylvania freight yards at South Broad Street, most produce would be delivered directly, and all that comes in on other roads could be cheaply transferred to it. The land needed is comparatively cheap, and there is room for unlimited expansion.

On this property could be placed ten spur tracks parallel to Avenue A. On one side of each of these tracks, on car floor level, would be a continuous platform, 9½ feet wide. These platforms would be used by commission dealers. The open spaces between would be wide enough to permit retail merchants' wagons to back up against them, with a clear space in the middle for wagons

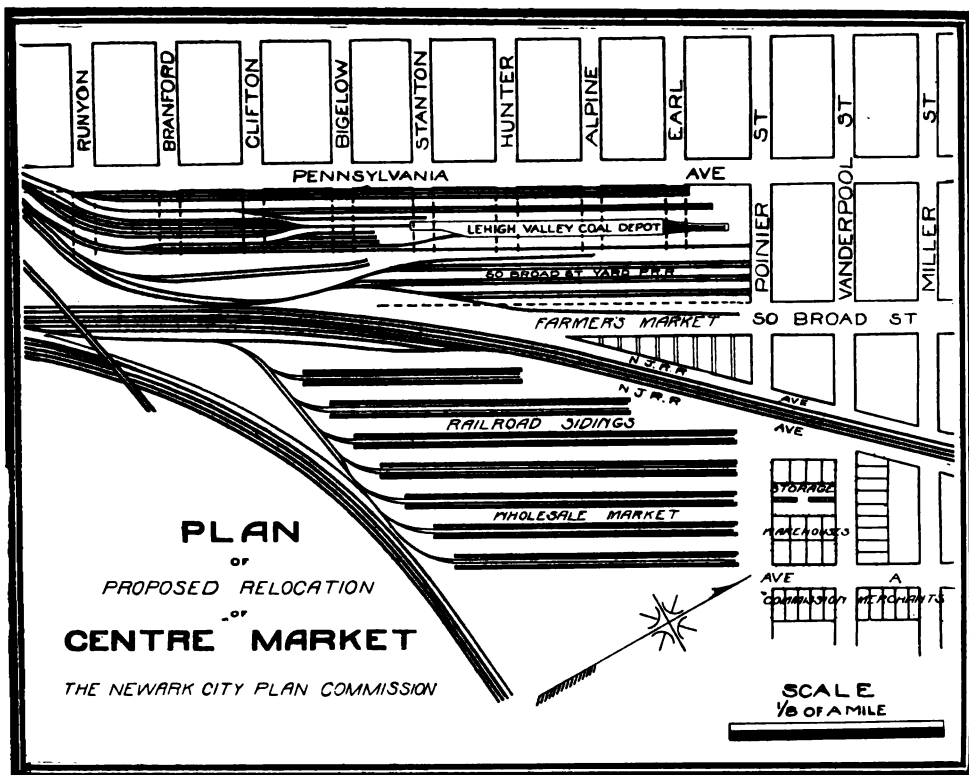


PLATE XXVI.

There are ten spur tracks parallel to Avenue A. On both sides of each of these tracks is a platform for the use of commission dealers. Between the tracks is room for retail merchant's wagons to back up to the platform with sufficient space for a clear passage in the center. On these ten spurs can stand 300 freight cars, with 1500 wagons backed up to them. This is more than enough for the present business; and the plant can later be extended to the east.

On Poinier Street, which is widened to 100 feet, is a building four stories high. This building, of concrete, has an open space in the center giving commission merchant's wagons and trucks access to the elevators and lifts to cold storage rooms on the third and fourth floors. The second floor is for offices of administration and commission merchant's private offices. The ground floor has auction rooms for the sale of produce by sample.

A Farmer's Market could be placed between the Pennsylvania Main Line, South Broad Street and Poinier Street.

to pass in either direction. Total clear space would be 54 feet. Here could be accommodated about 300 freight cars with about 1,500 wagons backed up to them. This is more space than is now needed, but as Newark would soon overtake this capacity, an extension of this same system to the east would be provided for.

Across the ends of the spur tracks would be a street, 100 feet wide, which would connect with Broad Street and the rest of the city through three arches under the Pennsylvania main tracks.

Along the north side of this 100-foot street (which would be a broadening of Poinier Street) would be erected a four-story building, the ground floor used for auction rooms, where produce would be sold by sample only. A large open space in the center of the building, running from north to south, would allow free access for commission merchants' wagons and trucks to elevators and lifts, by which surplus produce could be taken up to cold storage rooms on the third and fourth floors. The second floor would be occupied by administration and commission merchants' private offices. As the building suggested, about 200x400 feet, would not give room for all commission merchants, the report recommended the erection, as needed, of one or two story buildings, 100 feet deep, on nearby streets, to be rented to merchants.

This plant would easily handle the city's food supply. The land needed could be had for an extremely small sum and the buildings, of reinforced concrete, would be inexpensive. The total cost would be less than for any other scheme.

The rents charged commission merchants, and rents for cold storage and office space, would be a source of revenue to the city. Furthermore, a produce market on this site would bring land in the neighborhood into the real estate market, to the advantage of the city in increased taxes.

Farmers' Market

In this same report provision was made for a farmers' market on the triangular plot at the junction of Broad and Poinier Streets, the same to be paved and crossed at regular intervals by islands, as in the present farmers' market. Opportunity for growth is given to the north.

Public Opinion

The recommendations in this report were received with both approval and protest.

The city authorities did not consider the time ripe to make the changes suggested and on November 8, 1912, the Common Council passed an ordinance authorizing a bond issue of \$400,000 for the erection of a retail market on the site of the present farmers' market. Plans for a building were drawn, but were not accepted, the cost being some \$200,000 in excess of the appropriation. No provision was made for a farmers' market.

Supplemental Suggestions

As that part of public opinion which took the trouble to express itself did not favor the abolition of the retail market, a supplementary report on the market problem was issued, January 29, 1913, by this Commission. In it the advisability of establishing a wholesale market was again emphasized; but, since an appropriation of \$400,000 was available for the erection of a retail market, the report suggested that, if public opinion demanded it, a building for that purpose could be erected on the eastern end of the present farmers' market site. That portion of the property not used could then be sold for between \$400,000 and \$500,000.

A financial statement was submitted with this report as follows:

The cubical contents of the proposed city retail market is 1,056,000 cubic feet. At thirteen cents a cubic

foot this would cost about \$137,000. This, subtracted from \$400,000 appropriated, gives \$263,000 available for the South Broad Market. If the city sold the portion of the present market site nearest Broad Street for \$400,000, there would be a total of \$663,000 for the wholesale auction market, as proposed. Of this, \$74,740 could be paid for 77,000 square feet of land. The cost was estimated as follows:

Auction market rooms, 1,000,000 cubic feet.....	\$120,000
Offices and Administration, 784,800 cubic feet.....	156,960
Farmers' Market, paving, curbing, etc.....	20,000

These are the essential items. The cost of the land plus these three items equals \$371,700. This leaves, of the \$663,000, \$291,300 for cold storage and commission merchants' stores. In the original estimate, \$623,580 was allowed for these two purposes. If the space allowed for these purposes be reduced by a half there would still be sufficient room for some time to come and the cost of the entire plant would be within the available funds.

Thus, with no additional appropriation, the available funds could be so distributed as to give the city a modern, efficient, one-story retail market on its present site, and an up-to-date, economic, wholesale auction market at South Broad, after the original suggestions.

On May 10, 1913, the Common Council approved the purchase of a site bounded by Mulberry Street, Hamilton Street, Lawrence Street and the Central Railroad, to be used as a farmers' market. On May 13, 1913, this Commission sent to the Mayor a protest against this action, not only because it was in contravention of the law which requires the report of this Commission on the platting or replatting of any public land within the city, but also because it was not expedient to purchase such high-priced property for the use of a farmers' market. The protest also stated that this site is in no wise suited for a farmers'

market, on account of the poor character of nearby streets, none of which can accommodate the large amount of trucking attendant upon a farmers' market. Subsequently, the Mayor vetoed the action of the Common Council.

The Bond Issue

Up to the time of preparing this chapter the authorized bond issue for the erection of a new market had not been offered for sale, and the status of the question was little changed from what it was a year ago. This Commission, therefore, once again urges upon the city authorities, as well as the general public, the advisability of erecting a wholesale auction market, in accordance with its previous suggestions. The success of such markets throughout the world has proved their value beyond question. Specific instances could be cited did time and space permit.

This Commission further urges that, should it seem wise to erect a retail market on or near the present site, a plan similar to that suggested in the supplementary market report, quoted above, be adopted.

One more suggestion is here offered.

Sub-Markets

Counts of patrons of Centre Market show that an average of less than 4% of the total population of the city is directly or indirectly supplied with food from it, and if a new retail market were built on the old site, it is doubtful if a larger percentage of the city's population would be supplied by it.

The logical plan, therefore, is to abandon the proposition to build one retail market for the whole city; and near central points in each of the city's more thickly settled sections build sub-markets, and thus supply directly the greatest possible number of people. An examination of

the population map of the city indicates that such sub-markets could well be located thus:

Eighth Avenue, near Sheffield Street.

Broome Street, near Eighteenth Avenue.

Springfield Avenue, near Tenth Street.

Ferry Street, near Hamburg Place.

These markets and the suggested wholesale market could be erected with the funds available, together with the money realized from the sale of the present site.

The Retail Market Fallacy.

Here are a few of the objections to the maintenance of a retail market:

It serves only about 4% of the population, though it is a large expense upon all.

It furnishes no better or cheaper food than can now be bought at stores throughout the city.

It gives a few retailers stores at cheap rentals in a specially favored site, at the City's expense.

Times have changed since the days when, in a large town with the characteristics of a village, such as Newark was twenty years ago, men and women could spare time almost every day to visit a market.

We now have telephones, and motor deliveries, and it is an absurd and belated economic waste for intelligent and efficient men and women to spend from half an hour to two hours in frequent visits to a central market that they may inspect and buy personally their daily food.

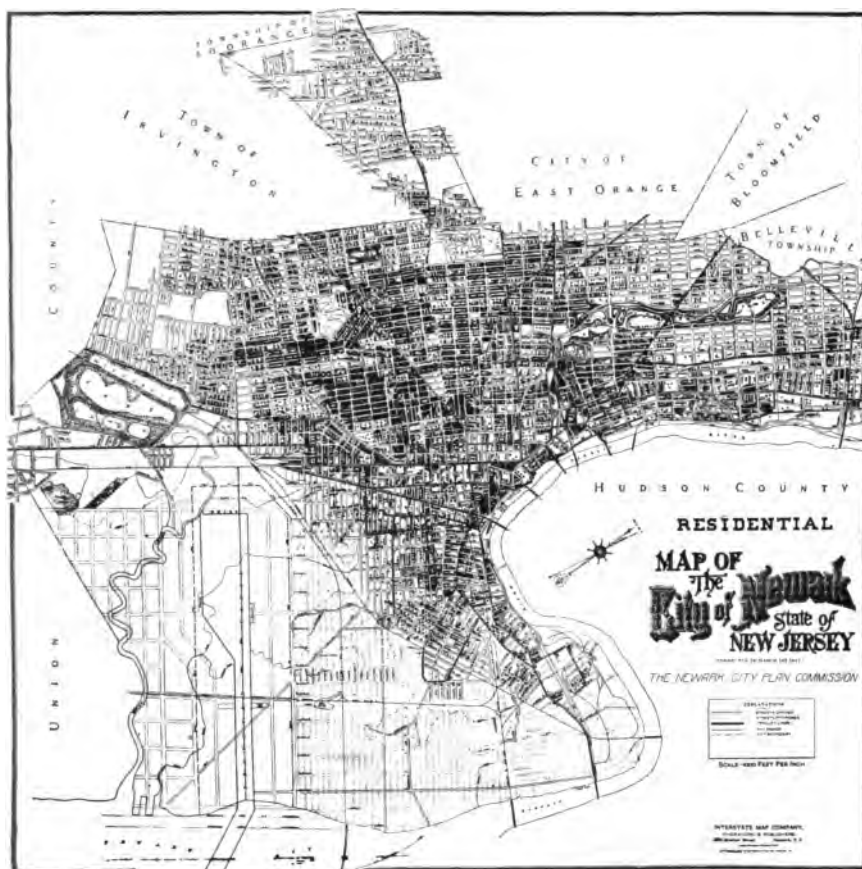


PLATE XXVII.

The distribution of the residential population of the city as given on the insurance maps is here shown graphically by dots. Each dot represents 25 people. The congested sections are shown very clearly by the density of the dots. Note the room for expansion to the north, south and west, where dots are less numerous.

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CHAPTER VI.

TROLLEY TRANSPORTATION

The Problem

Newark has long been afflicted with a congestion of its trolleys, which is steadily becoming worse; that is, cars enough to carry those who would ride can not be run on the tracks which the present street plan can supply.

Many suggestions have been offered for relief. When the experts of this Commission were first engaged they saw at once that Newark's greatest need was adequate trolley facilities. With this in mind they at once devoted themselves to a study of the situation. On June 19, 1913, this Commission presented to the Mayor and the Common Council a report from their experts in much detail, the results of almost a year's continuous study of the problem.

Newark is growing very steadily. In 1940 its present population of 370,000 will have become about 1,000,000. It is the center of a great metropolitan district with a present population of 1,000,000, which will have become 3,000,000 by 1940. Newark is and will continue to be the center of the vast volume of rapid transit this population demands. That Newark is gradually adjusting itself to meet the many demands this growth will make upon it, was shown in this report by tables. These told of rapid expansion in many lines, such as postal receipts, building operations, manufacturing output and value. Such statistics are sometimes called the thermometers of healthful civic growth.

The rate of growth in street car use is shown by the following figures published in the "Newarker," the monthly house organ of the Free Public Library:

In 1893 200,000 Newarkers took 18,000,000 street car rides.
In 1903 285,000 Newarkers took 45,000,000 rides.
In 1912 370,000 Newarkers took 78,000,000 rides.

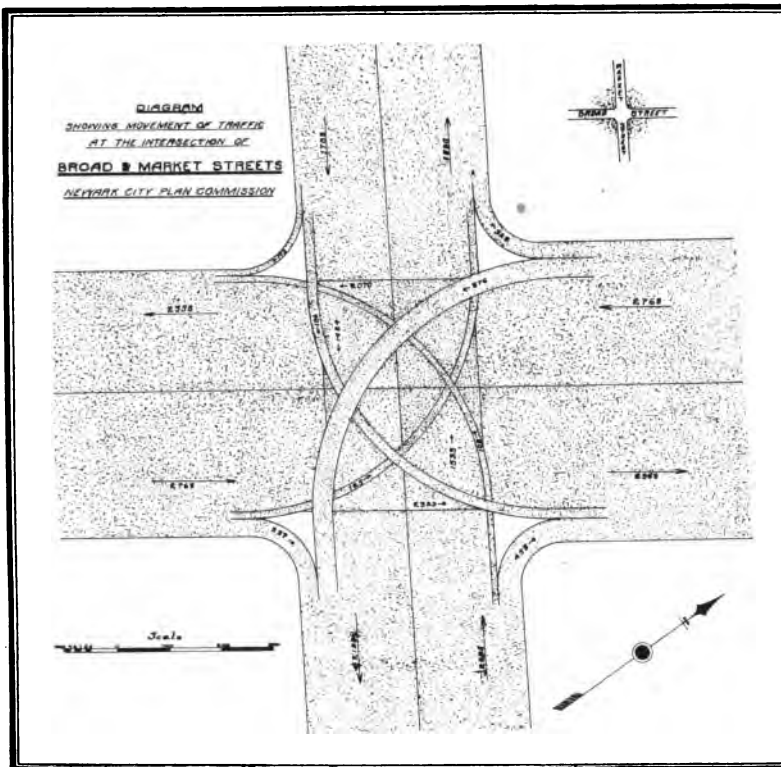


PLATE XXVIII.

The width of each band represents the proportion of travel in each of the various directions indicated by the arrows. The numbers show vehicles and cars which make this crossing each day, from 8 A. M. to 6 P. M. Note the small proportion of vehicles making left-hand turns. Since this study was made all left-hand turns have been prohibited at this point.

In twenty years the population increased 85%; rides in street cars, 330%.

In 1893: Newarkers took 90 rides apiece.

In 1903: 157 rides apiece.

In 1912: 210 rides apiece.

In twenty years the street car habit grew 233%.

These figures amply prove that street car facilities in Newark must be greatly increased in the near future.

Public Loss

The loss of time and money to patrons of an insufficient system of trolley cars is well illustrated by a few figures. During the rush hour 526 cars are scheduled to operate over the "Four Corners." Each car loses on the average one minute at this point. During rush hours the majority of cars are loaded beyond their capacity. An average load of 45 passengers may be a fair assumption. Then multiplying the number of cars, 526, by the number of people, 45, each losing one minute, gives 23,670 minutes lost twice a day at this point alone. In one year, 300 days, this amounts to 236,700 hours. At 25 cents an hour, a very low estimate, this means an annual loss to the travelling public of \$59,175. And this is but a fraction of the grand total of loss in the whole city. Consider the amount of time lost in waiting for cars, and by unnecessary stops, and the amount of energy wasted in standing and hanging in cars from five minutes to half an hour twice a day, 300 days in the year! A four-cornered village makes a poor setting for a metropolitan street railway system.

Public Service Railway Company

There is but one operating company in all of our metropolitan area, and it realizes how pressing is its problem and how difficult the solution. It can do little, however, without the co-operation of the city.

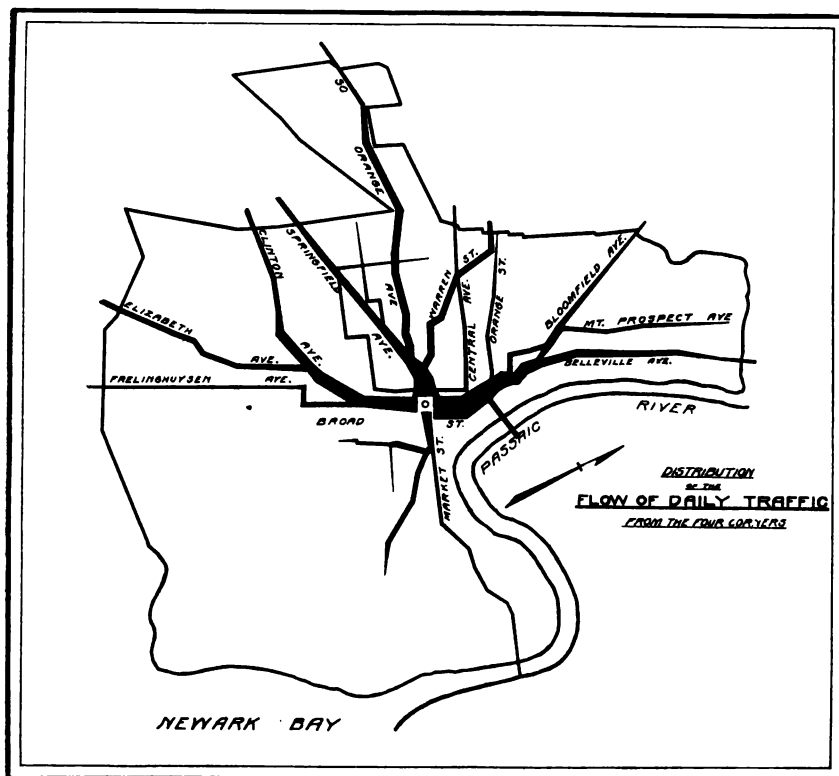


PLATE XXIX.

Approximately 200,000 people enter and leave the "Four Corners" upon the trolley cars, each day, from 7 A. M. to 7 P. M. The greatest proportion of this travel is north and west as shown by the width of the bands in the diagram. These illustrate the proportion of travel upon each of the various routes. Note the great radial thoroughfares, the lack of cross-town lines, and the peculiar centralization at the "Four Corners."

Study of Conditions

To study trolley congestion effectively it was necessary to learn where, when, and how the daily flow of population took place. Maps were made showing the location of day and night populations. Men were placed upon each line of cars operating in the city, who made counts of people entering, leaving and aboard, over the entire length of all lines within the city. One day, from 8 A. M. to 6 P. M., was given to the study of each line. These figures were tabulated and so plotted upon charts as to show the comparative use of the whole line throughout the entire day and also all points on it. From these charts was discovered which lines were being used to advantage, and when; what lines were being used beyond their capacity, and the overload; the extent of local and suburban traffic, etc.

Men were also placed at many points to count the cars operated through certain sections, the number of seats and passengers in each case being noted. From these figures the average flow of daily traffic was determined, and the comparative number of seats and passengers upon each particular line at any time during the day from 7 A. M. to 7 P. M.

Rerouting

After these figures had been made intelligible in tables and charts, the specific nature of each line was determined, i. e., local or suburban, crosstown or non-crosstown, what lines were serving each section of the city and how, etc. It was then discovered what lines could best be removed in a plan of rerouting. All facts acquired being taken into consideration, three rerouting schemes were evolved with provision for increased traffic on all lines. It was thus shown how facilities could be very nearly doubled.

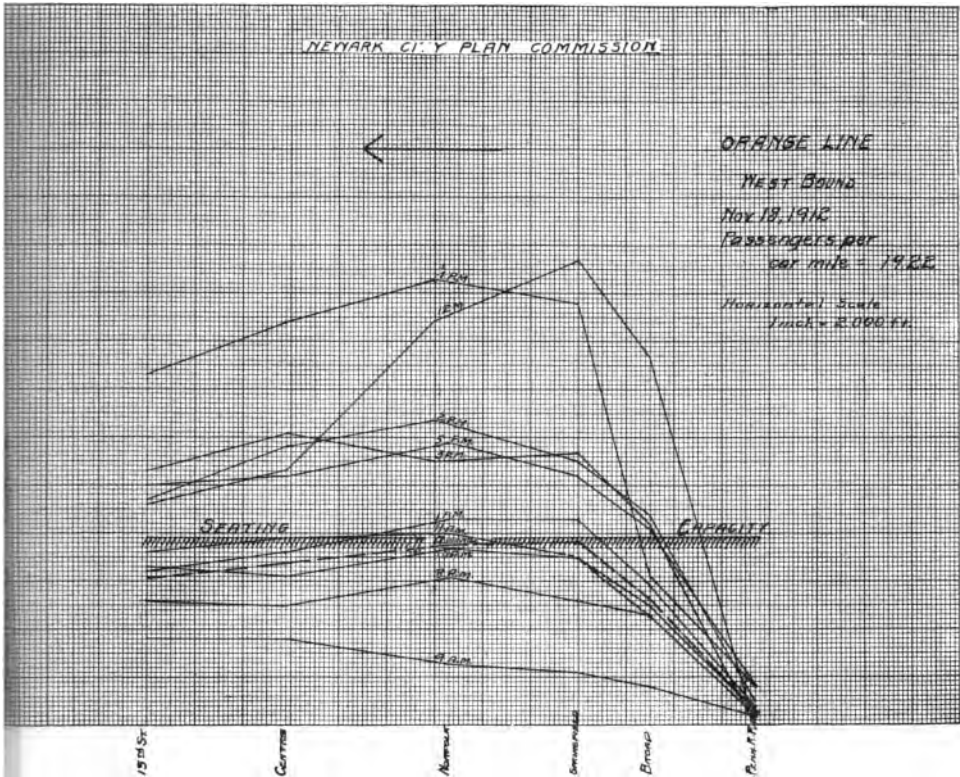


PLATE XXX.

This chart shows one of the methods employed for studying the traffic data collected. Each line represents a typical trip for each hour of the day upon the Orange line, west bound, from the Pennsylvania Railroad loop on Market Street to the city line. The number of passengers aboard at each point on the route is shown by the vertical scale. The hatched line represents the average seating capacity of each car. All lines above the seating capacity line represent standing passengers. Note the large number of standing passengers throughout very nearly the entire afternoon. This is one of the most congested lines in the city. Figures used in plotting this chart were obtained by men riding on the cars, a record of entering and leaving passengers being made at each stop.

Charts of this nature were made for each line operating in the city.

In the development, however, of any rerouting scheme it is not always possible to use existing thoroughfares only, particularly when the cars operate in an intensively-used business section, where it is obviously necessary to leave certain streets to vehicular traffic exclusively. And so, in the evolution of rerouting for Newark, it was soon evident that, for a proper scheme, certain street openings and widenings were absolutely necessary. It follows that the city, and the city only can make possible that increase of facilities by which alone its trolley congestion can be removed or notably lessened.

The first four improvements suggested in Chapter I. of this report are the direct outcome of this study of trolley transportation and it is because of the urgent need of relief in this most pressing difficulty that these improvements were considered the most important of all that could be made.

Trolley Transportation Report

The report of the experts to this Commission on trolley transportation was based on a scientific and comprehensive study of the operating system throughout the city. The report has never been printed and exists in manuscript form. There are 107 pages of reading matter, 16 pages of tabulated matter, and 141 maps and charts. It is divided into four chapters. The first analyzes present and existing conditions. The second is devoted to an analytical study of individual lines, also to the character of operation of the system. The third is in two parts. The first contains an explanation and description of three different plans of rerouting the cars. The second is a study of the proposed Public Service Terminal and the several franchise grants requested in connection therewith. Chapter four contains a general description of the lines along which the city and the company should proceed in the development of a logical system of rapid transit.

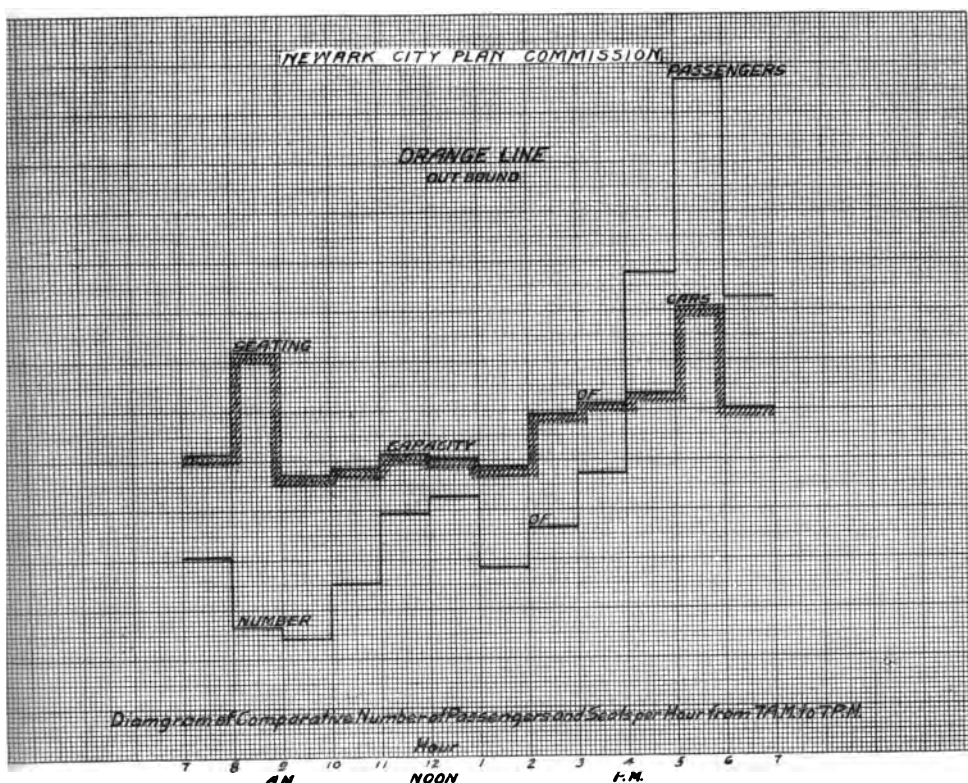


PLATE XXXI.

Here is supply and demand. The hatched line represents the total number of seats available each hour throughout the day, west bound, on the Orange line. The full line represents the total number of passengers using this line, hour by hour, throughout the day. Note the excessive seat supply in the morning rush hour and the corresponding lack of seats in the evening rush hour. The irregularity of the flow of travel is well illustrated by the line of total passengers, and by this one can obtain a vague idea of the problem which faces the operating company in regulating the supply to meet the demand.

Charts similar to this were made for each line operating in the city.

Attitude of the Commission

This Commission informally approved of the rerouting scheme presented by its experts; but felt sure that the city is not yet so converted to the value of good and efficient streets as to make it willing to spend in the near future several million dollars on the street changes which proper rerouting would call for.

This Commission also felt that the rerouting scheme suggested,—by which many cars, now reaching the “Four Corners” or near thereto, must stop and turn back short of that point,—would not meet with approval in a city which, through a time-honored and very bad habit, thinks itself cheated of the best of a trolley ride if it does not reach “Four Corners”!

This Commission, therefore, decided that wise city planning for Newark demanded that the city, accepting the trolley company’s scheme in the main, should proceed at once to improve its own street system and secure thus proper trolley thoroughfares for all time; and also decided to advise the adoption by the city of the trolley company’s proposal almost entire.

As suggestions for street opening and widening made elsewhere in this report plainly show, this Commission is still of the opinion as to the pressing demand for improvements in the street system. It believes that the trolley company’s plan will lead to better transit service; but it holds that only by the early and wise expenditure of large sums on improvements of the city’s plan can efficient, satisfactory and economical operation be secured for more than a few short years.

Public Service Terminal

During the current year the trolley company, appreciating how intolerable are present conditions, submitted

NEWARK CITY PLAN COMMISSION
RESUME' OF TRAFFIC COUNTS

Line	Date Observed	Direction	Observed Dist	Observed No. Riders	Pas. Entering	Pas. Leaving	Pas. CM	Pas. Haul	Air Speed Per Hr.	Max. at one Time	Route Time Miles
Bloomfield Ave	July 22 1912	North	2.35 M.	25	1349	382.	22.67	7280	7.46 M.	85	6.73
		South	2.38	23	429	1248	8.82	7600	6.67 M.	66	
Bergen St	Jan. 24 1913	North	4.20	16	582	617	8.94	8450	7.78 M.	52	9.65
		South	4.11	16	477	457	6.93	8100	7.68 M.	44	
Clinton Ave	Jan. 25 1913	North	3.52	18	701	687	10.84	7000	8.05 M.	32	7.09
		South	3.52	18	810	893	12.78	5700	7.89 M.	52	
Roseville Ave	Nov. 22 1912	East	2.50	28	972	979	12.57	6820	7.72 M.	46	4.78
		West	2.46	27	889	883	12.27	8870	8.45 M.	75	
Central Ave	Nov. 25 1912	East	2.61	26	674	1060	9.93	5950	7.70 M.	94	5.37
		West	2.65	26	1070	750	15.82	7060	7.34 M.	65	
Mulberry	Nov. 26 1912	North	3.30	21	373	379	3.35	5950	8.33 M.	17	6.82
		South	3.50	22	467	851	4.38	5100	8.27 M.	28	
Mt Prospect	Oct. 31 1912	North	3.67	19	1062	846	15.97	4820	7.98 M.	62	12.90
		South	3.67	19	607	959	9.13	5530	8.16 M.	74	
Orange	Nov. 18 1912	East	2.44	28	526	1395	7.70	8000	8.30 M.	68	4.95
		West	2.44	27	1252	439	19.22	7850	7.43 M.	97	
So. Orange	Nov. 20 1912	East	2.74	21	1083	1215	17.93	3190	7.65 M.	100	12.35
		West	2.74	20	1081	880	19.72	3230	6.35 M.	98	
Broad	Nov. 1 1912	North	3.03	19	484	481	8.47	3930	7.10 M.	67	12.55
		South	3.03	20	1033	841	17.25	3960	7.75 M.	40	
Kinney	Nov. 19 1912	East	3.69	19	683	843	9.77	5450	7.65 M.	45	9.33
		West	3.67	18	806	701	12.31	5560	7.18 M.	57	
Paterson	July 7 1912	North	2.22	25	1269	231	25.98	14290	7.28 M.	96	7.59
		South	2.22	23	187	1123	3.67	15040	7.48 M.	65	
Elizabeth	July 12 1912	North	2.80	22	377	1121	6.17	15120	7.99 M.	70	9.49
		South	2.80	21	1325	543	22.23	13320	7.44 M.	66	
Main Line	July 14 1912	North	2.86	22	317	1228	5.38	13720	7.99 M.	37	8.86
		South	2.86	29	1037	321	17.62	12440	8.31 M.	64	
Kearny	Nov. 4 1912	North	2.10	29	1385	571	22.74	4090	7.46 M.	70	4.63
		South	2.10	28	448	1327	7.64	4120	7.27 M.	68	
Clinton	Nov. 29 1912	North	3.78	15	731	703	12.89	6840	6.84 M.	60	12.30
		South	3.78	16	728	963	12.84	8560	6.97 M.	95	
Plank Road	Nov. 21 1912	East	3.61	16	948	977	12.95	6780	7.78 M.	58	10.50
		West	3.61	18	839	829	14.53	9700	7.12 M.	96	
Springfield	Jan. 22 1913	East	3.84	10	724	1053	10.47	7600	7.26 M.	71	7.67
		West	3.69	18	1171	811	15.26	8300	6.83 M.	75	

PLATE XXXII.

One entire day was given to the study of each line of cars operating in Newark. The investigation included each of the subjects listed as headings in the table. The results, as summarized, afford interesting comparisons and show the extent of the studies made.

to the city authorities a proposal for the solution of the problem in the form of a new terminal building, together with extensions of the present system. The work proposed was to be undertaken solely by the trolley company and involved an expenditure of from four to five million dollars.

The terminal building, to be erected near the business center of the city, is to have two approaches,—one a subway leading to an underground floor; the other an elevated structure leading from an opposite direction to an upper floor. Loops were provided for each within the building. The building proper, eight stories high is to be used for the home offices of the company, which owns and controls trolleys, gas and electricity in the vicinity; the main or ground floor is left as a concourse, free from trolley operation.

The terminal will be the first step toward better rapid transit in Newark. It will give to the public an idea long needed in Newark—that all good transportation does not necessarily terminate or originate at the “Four Corners.”

The ultimate rerouting of the cars with regard to the terminal cannot yet be determined, quite obviously. Certainly the terminal will at once absorb surplus travel during rush hours. It will also serve as a center for suburban lines, thereby differentiating local and suburban travel, a highly desirable feature.

The plans offered were in effect approved by the Board of Street and Water Commissioners and are now being considered by the State Board of Public Utilities. The chief inspector of the latter body recently issued a report on the subject. In it he included six of the specific recommendations previously suggested by this Commission. He also expressed the opinion that final solution of the trolley problem will be found only in the opening and widening of streets by the city; but, in view of the fact that such improvements would probably not be soon



PLATE XXXIII.
PROPOSED PUBLIC SERVICE TERMINAL.

undertaken, he feels that the suggestions offered by the Public Service Railway Company should be in general approved.

The City's Duty

The construction of the terminal will not give relief for more than ten or twenty years, in the opinion of even the railway company. At the end of that period conditions will have become fully as bad as they are at present, provided the city does not make improvements in its streets. The trolley company cannot be expected to finance such improvements, although it should bear its just share. The sooner the city undertakes the improvements the cheaper will they be, and the better for itself and all concerned.



PLATE XXXIV.
 PROPOSED PUBLIC SERVICE TERMINAL.
 CROSS SECTION.



KEY
 PRESENT TRACKS - - - -
 PROPOSED TRACKS ————

PLATE XXXV.
 EXTENSIONS PROPOSED BY PUBLIC SERVICE.

CHAPTER VII.

THE MORRIS CANAL

The Morris Canal has for years been the subject of discussion, investigation, research and debate by legislature, society and individual. Recommendations, suggestions and plans have been many and diverse, some based on facts, some on hearsay, and some only on knowledge and recognition of particular local conditions. As a result, a subject itself unusually complex has become doubly so, and the facts clouded. The latest inquiry is being made by the Morris Canal Investigation Committee, provided for by the Legislature of 1912. That committee, it is presumed, will report its conclusions and findings to the Legislature of 1914.

Construction of the Canal

The construction of the canal from the Delaware River to the Passaic was authorized by a law passed in 1824, which incorporated the Morris Canal and Banking Company. The charter perpetually exempted the canal property from taxation, permitted it to exact toll charges, and provided that ninety-nine years from the passage of the act the State could purchase the canal at a fair valuation; but on failure so to purchase, the charter of the company was to continue for fifty years longer, when it was to cease and the canal become the sole property of the State.

A supplemental act, in 1828, provided for an extension of the Canal from the Passaic to the Hudson. Work was begun in 1825 and completed in 1836. Its length was 102 miles, with 4.69 miles of feeder. An elevation of 514 feet from the Hudson River to Lake Hopatcong is overcome by 12 inclined planes and 16 lift locks. It has a capacity of about 1,000,000 tons per annum each way.

Pursuant to authority given by the charter, the Canal Company obtained lands and flowage rights at Lake Hopatcong and raised the waters of the latter about eleven feet, thereby making the wonderful lake we know to-day. The lake is, therefore, partly natural and partly artificial.

A total of 6.81 miles of the Canal lies within the borders of the present city of Newark.

Titles to Canal Property

The titles in the lands taken and held by the company for the Canal and its uses are of four kinds:

	1—By condemnation. Miles.	2—By deed with re- versionary clause. Miles.	3—By gifts, occupa- tion or adverse user. Miles.	4—By absolute deed. Miles.
Total	62.66	23.00	7.82	13.21
City of Newark.....	2.41	1.06	1.81	1.53
Essex Co., west of Newark..	3.57	0.96	0.40	0.42

The title to the lands in column two would revert to the original owner upon the vacation of the Canal; as would that in column one, unless the Legislature should authorize a change of the public use to which they are devoted, in which case they could be used for the changed public use.

The lands covered by the reservoir properties of the company are:

Greenwood Lake, 787.00 acres; Lake Hopatcong, 460,-86 acres; Stanhope Reservoir, 351.35 acres; Cranberry Lake, 300.00 acres; Bear Swamp, 89.14 acres; Green Pond, 10.01 acres; total, 1,998.36 acres.

The total cost of the canal, including enlargements of planes and locks in 1841, was \$5,100,000.

Basin of 1867—Grant of 1889

By Act of March 14, 1867, the state leased to the Morris Canal and Banking Co. a tract of land under water in Jersey City commonly known as the "basin of 1867," adjoining the Morris Canal basin, on condition that it should pay to the state \$25,000 per year, which payment might be capitalized at any time by payment of \$357,142. The annual rental was paid till 1889, when the capitalized sum was paid to the state by the Lehigh Valley Railroad Company, the lessee of the canal, together with the further sum of \$48,000 (being the statutory price of \$50 for each lineal foot) and the Company received a grant in fee simple of this basin. This property is now used for railroad purposes. The canal company released its interest in this basin for \$500,000, which sum was applied to the indebtedness of the canal company.

Said lessee agreed to pay 4% per annum on about one million dollars of common stock and 10% on over a million dollars of preferred stock, together with interest on the funded debt, a total outlay of \$188,500 per annum. The lessee also agreed to pay miscellaneous debts of the Canal Company amounting to over \$166,000 and to provide for the payment, extension or renewal of debts of the Canal Company aggregating over one and one-quarter millions. This indebtedness was reduced by applying monies received on sale of canal lands on account of such indebtedness until the indebtedness of the Canal Company for which the railroad company was liable under the lease consisted of a bonded debt of \$500,000 and \$2,247.-237.50 of stock and scrip. Most of this stock is now owned by the railroad.

In 1907 the state instituted a suit in Chancery attacking the grant of 1889 and seeking to obtain a decree that on reimbursing the Lehigh Valley Company for its expenditures or on other equitable terms, the lands should revert to the state in 1974. A decision in this suit was

rendered by Vice Chancellor Stevens, February, 1911, sustaining the position of the state and directing the state to refund the sum paid for this grant (\$48,000) with interest.

Commercial Use of the Canal

The Canal has been a bad bargain and a disappointment to its several owners from the first. It failed and was reorganized twice in its early history. In 1866 business reached its highest point with a tonnage of 889,220 and gross earnings of \$616,350. Business then began to decline and in 1871, when leased by the Lehigh Valley, the tonnage was 629,044 and the gross earnings \$283,725.34. The tonnage was only 27,392 in 1902, or less than half the tonnage of 1845, carried at a much less rate per ton. There has been a slight increase in tonnage since 1902, the tonnage of 1910 being 55,328, that of 1911, 60,877.15, and for the nine months ending March 31, 1912, 35,926.13. Of late years but few boat-loads of coal have been sent down the entire length of the Canal.

According to the statements of the Lehigh Valley Railroad Company, the first year's operation under the lease resulted in a net loss of \$176,257.33, and from that date to 1910 the entire deficit amounts to \$10,873,578, or more than five times the cost of the original canal and more than twice the cost of the original construction and enlargement. Not one cent has been made from operating the Canal since 1876, and, including the interest and dividend charges, the deficit has been continuous since 1871.

The present type of canal boat can carry 70 tons of coal; any of the three parallel railroads can carry 2,000 tons per train. The route by canal takes five days, that of the railroad five hours. The coal must be shoveled from the boats by hand and carted to the yards of coal dealers. The railroads can shunt the coal onto the dealers' sidings

and dump it. The canal is open about 7 or 8 months in the year and free from ice.

Legislative Commission of 1905

The report of Governors Werts, Griggs and Voorhees, appointed a commission to investigate the Canal question, made in 1905, concludes that:

"Ownership of the Canal as a canal would be of no value to the State."

Agreement on Overhead Construction

October 16, 1852, the Morris Canal and Banking Company and the City of Newark entered into an agreement by which the Canal Company gave to the city in perpetuity the right to erect and build over so much of the canal end of the towpath on the south side thereof, as extends from the east side of Broad Street to the west side of Mulberry Street, any erection that the city should deem proper and expedient, with restrictions guarding against interference with the convenient operation of the canal.

The city in consideration of the agreements of the Canal Company agreed to maintain all bridges then erected over the canal within the City of Newark, and erect any additional bridges necessary.

Taxation of the Canal

By its charter the canal property of the company was exempted from taxation. This exemption was recognized in the supplement of 1867. Despite this fact after the passage of the railroad tax law of 1884, the state assessed the canal property. The right so to do was attacked by the Lehigh Company and the case is now before the United States Supreme Court. The company paid under protest taxes to cover the years 1884 to 1889, inclusive,

amounting to \$150,000. The amount of the annual taxes paid under protest has increased gradually to \$63,021.11 in 1910. In 1911, however, the tax paid was only \$56,-667.64.

This is, in substance, the history of the canal with its various complications and indicates in the main the different interests involved.

Legislative Committee of 1912

In 1912 a Committee, authorized and provided for by the legislature, and consisting of the then Governor, Woodrow Wilson, Attorney General Edmund Wilson and former Supreme Court Justice Bennett H. Van Syckel, submitted a bill for solving the canal problem, prepared as a result of conference with representatives of the lessees and owners of the canal.

The bill divided the Canal into three parts. One part, comprising all of the Canal west of Paterson, was to be conveyed to the state, free of encumbrances and with all land and water rights. A second part, from Paterson to the New York Bay Railroad near Fiddler's Elbow, to be deeded to the state and sold. Money realized from sale, after paying incidental expenses, was to be divided equally by the state and the Lehigh Valley Railroad. The third sub-division, from Fiddler's Elbow to and including the basins in Jersey City, was to be conveyed to the Lehigh Valley Railroad, subject to the conditions of the Act of 1867. On delivery of deed, the Lehigh Company was to pay the state \$500,000, release its claim to the \$48,000, with interest, as recently awarded, as well as exemption from taxation on property retained and its claim to recover taxes paid under protest amounting to more than \$798,471, besides interest.

Numerous provisions were made to meet local conditions, particularly those of Newark. Various objections were raised by communities along the Canal, and though

the bill was amended to meet these objections it was soundly defeated. The majority of favorable votes were from Essex County, showing that the interests of Newark alone were satisfied with the provisions of the bill.

Present Morris Canal Investigation Committee

A resolution was subsequently passed providing for a Committee of twelve men, one from each Congressional District in the State, to investigate fully the canal question and report to the legislature. This committee consists of Carlton Godfrey, of Atlantic City, Chairman; Charles H. Ingersoll, of South Orange; John W. Westcott, of Camden; Colonel William Libbey, of Princeton; John D. Ely, of Marlboro; John I. Blair Reily, of Phillipsburg; Foster F. Bird, of Dover; Mangold H. Ellenbogen, of Paterson; C. Howard Slater, of Jersey City; Albert F. Ganz, of Hoboken; Henry M. Doremus, of Newark, and Fred G. Stickel, Jr., of Newark. The resolution was comprehensive and called for a most exhaustive survey and search of the interests of the Lehigh Valley and the Morris Canal & Banking Company in the canal, the value thereof and the value to the State. The resolution provided that neither the members nor the officers of the committee should receive any compensation.

The Canal is a big problem and its solution is important to the city of Newark. Its proper solution may furnish the key to the solution of Newark's traffic problem, remove a menace to health, (although the canal is in better condition to-day in Newark than in many years) an eyesore, and provide a means for the further development of Newark that is almost limitless.

The matter should be carefully considered, but not solely from a local standpoint, for other municipalities are as vitally interested, and their interests are fully as important as are Newark's.

A State Problem

This is a State and not a local problem, and it does not behoove any one locality to prevent the solution of this state question because all the demands of that particular locality cannot be granted. The several localities each have a right to ask that their interests and grievances be given due consideration and attention. The lessee of the canal must also be considered, since its consent, as the assignee of the Morris Canal & Banking Company's Charter or contract with the State, is absolutely essential to any settlement of the question.

Park Boulevard Plan

A Park Boulevard Plan recently suggested by Mr. Fred. G. Stickel, Jr., member and secretary of the present legislative investigating committee, would provide for abandonment through Newark and Jersey City and the diversion of the canal by pipe or navigable stream into the Second River at Belleville, and thence to the Passaic; the retention of the canal south and west of said Second River to the Delaware, either as a continuous canal or as a series of pools or bodies of water. The latter to be separated by stretches of park, paralleled on either or both sides by a broad tree-shaded boulevard, bordered by a tract of land probably 100 or 200 feet in depth to be obtained and sold under proper restrictions for building purposes. The proceeds of the sale and those received on a settlement of the problem with the Lehigh Valley, to be used to construct the boulevard. The boulevard would not be constructed through towns, cities or villages, but would be built to such places and the roads of each municipality would continue the boulevard through its confines. As the houses were built along this boulevard, a demand for a trolley line would arise and the State could then grant a franchise for a trolley on one side of the boulevard.

Such a boulevard would tap a section whose beauty is practically unknown, a veritable garden of Paradise, a region where for miles the old canal winds picturesquely around and upon the slopes of tree-covered mountains, and through field, forest and glade.

South and west of Newark the final solution of the canal problem undoubtedly lies in its being converted into a state boulevard as suggested. In first and second class cities there should be given the preferential right to buy. Such a right would be highly desirable in Newark, for many things could be accomplished did the city own the canal bed.

Newark and the Canal

First and foremost it could be used for transportation purposes west of Broad Street. In any case the bed could be lowered sufficiently to obviate the most objectionable grades on several streets as they cross the canal. A second feature would be the possibility of a municipal plaza immediately east of Broad Street.

In the eastern end of the city the abandonment of the canal would make possible the use of Passaic Avenue as a traffic highway. This is particularly desirable as there is now but one through thoroughfare in the Ironbound district.

The construction of Diagonal Street is at present impossible because of the grade which would be created at the crossing of the canal, unless the present lock be placed several hundred feet further west. Abandonment of the Canal in Newark would thus make it possible to carry out this most desirable improvement.

The Canal in its present condition is absolutely valueless as far as Newark is concerned, and since so much could be accomplished by its abandonment it is sincerely to be hoped that the present legislative investigating com-

mittee will arrive at a conclusion shaped to meet the requirements of all interests concerned.

Public spirited organizations would do well to assist in placing before the investigating committee suggestions which may help to avoid individual and local grievances; for, as has been said, this is primarily a state question. The man in Warren County is just as much warranted in saying, "Don't take this beautiful Canal from us; we need it and can use it," as the man in Newark is in saying, "Get rid of it. We don't want it in Newark."

CHAPTER VIII.

MUNICIPAL RECREATION

Recreation and Citizenship

There is a little concerted effort in our municipalities to foster good citizenship. To provide attractive playgrounds for boys and girls, where they may get beneficial exercise and wholesome amusement in the form of games of every wholesome kind, is to minimize idleness and attendant evils so detrimental to the younger generation. To provide public baths, gymnasiums and wholesome entertainments, in which the work-a-day world may re-create minds and bodies, is to lessen evils incident to the crowded city. The city can wisely provide physical, moral and social advantages, as well as educational.

Juvenile delinquency has been called misdirected play. That playgrounds reduce juvenile crime was clearly shown in Chicago, where the major portion of juvenile delinquents were found to live in districts unsupplied with playground facilities. There should be ample recreational facilities in every large city. A playground's influence is exerted only within an area of one-quarter mile radius.

Demand and Supply

TABLE OF USE OF ALL COMMERCIALIZED AMUSEMENT

Motion Picture Theatres.....	158,412	persons weekly
Burlesque Theatres	21,900	" "
Exclusively Vaudeville	16,320	" "
Vaudeville and Motion Pictures.....	74,262	" "
Theatres	27,714	" "
Total	298,608	" "

Here are demand and supply. The demand is natural and for the most part proper enough. These are busy, pressing times. Old and young not only wish to be

amused, they also wish to see the world go on, to take in the general rush of things; to "Have a good time," which usually means fun, movement, talk, argument and general play of all the faculties. Few are able to have clean, quiet, interesting homes, with bright lights, good books and games, and room for romping and dancing. The commercial amusement place supplies in a measure what the homes lack.

About all this the community can wisely do two things:

It can provide for itself a cleaner, brighter, more cheerful city, with better trolley service, more sanitary tenements, etc., all as suggested in this report, and so make it possible for more of our steady, working citizens to have such homes as attract boys and girls to home life; and it can help those who make it a business of furnishing diversion and amusement for a price to keep their places cleaner, more sanitary, more attractive, and more wholesome.

Classification of Playgrounds

Newark's playgrounds may be classified as follows:

- (a) Park Playgrounds—Portions of park equipped and used for purely playground purposes.
- (b) School Playgrounds—School yards in connection with school buildings.
- (c) Large Playgrounds—Areas large enough to accommodate all ages, including an athletic field, as well as children's spaces.
- (d) Small Playgrounds—Small areas accommodating only children and mothers.

The Essex County Park Commission supervises the Park Playgrounds, the Board of Education the School Playgrounds, and the City Playground Commission is concerned with the last two.

Park Playgrounds

The Essex County Park Commission maintain many playfields, game fields, athletic fields, and wading pools within its various parks. These features require less apparatus and supervision than is usually demanded of complete, extensively used playgrounds. The fields constitute an added feature to the very attractive parks, and are used by many adults. They are open only through the summer months. It is unfortunate that they cannot be used all the year round, in view of our limited play spaces. Competent directors and play-leaders should be in charge, and sports and games suited to every season should be encouraged and carried on.

Attendance at the park playgrounds during the season of 1911:

Playfields

	Branch Brook	Eastside	Westside	Riverbank
May	24,275	20,210	31,888	.....
June	20,920	16,665	38,367	.....
July	50,010	22,860	70,860	10,790
August	58,600	20,425	63,162	28,218
September	32,645	13,450	36,250	11,071
October	8,475	4,293	10,350	2,490
	<u>194,925</u>	<u>97,903</u>	<u>250,877</u>	<u>52,569</u>
Grand Total—	596,274.			

Game Fields

	Baseball	Football	Tennis	Cricket
Branch Brook	14,177	4,449	5,675	662
Weequahic	6,300	1,626	4,117	.....
Eastside .....	.....	.....	86	.....
Westside .....	.....	.....	1,372	.....
	<u>20,477</u>	<u>6,075</u>	<u>11,250</u>	<u>662</u>
Grand Total—	38,464.			

Athletic Fields

Branch Brook	76,245
Westside	4,074
	80,319

Wading Pools

Branch Brook	75,565
Westside	60,125
Riverbank	12,560
	148,250

School Playgrounds

The Board of Education maintains playgrounds on school premises and in connection with school buildings, twenty-two in all. These were used as summer playgrounds for seven weeks during summer vacation, from July 8 to August 23, 1912.

The Annual Report of the Board of Education for 1912 says:

"The playgrounds maintained by the Board of Education are in operation on school days from 1 to 5 P. M., and on Saturdays, from 8:30 A. M. to 12:30 P. M. Nearly all are equipped with the best up-to-date apparatus. The daily program includes, as special features, children's games of many kinds, manual occupation work, physical training, exercises, folk dancing and athletic sports. In addition to the twenty-two playgrounds wherein play is organized, the regulations of the Board require the yards of all school buildings to be kept open for the use and enjoyment of the children of the neighborhood from 8 A. M. to 5 P. M. each weekday of the summer vacation, excepting Saturday, when the school yards are closed at 12 o'clock, noon."

During the summer season of 1912 there were 9,965 children enrolled upon the twenty-two playgrounds, and 155 instructors were employed to supervise and direct the play.

City Playgrounds

At present there are seven City Playgrounds which are maintained the year round. These are located as follows:

- No. 1—Canal Street to Commerce Street.
- No. 2—Cor. Prince Street and Waverly Avenue.
- No. 3—Newton Street, near Bank Street.
- No. 4—Lafayette Street and N. J. R. R. Avenue.
- No. 5—Oliver Street to Chestnut Street.
- No. 6—Cor. Belleville, Arlington and Wakeman Aves.
- No. 7—Summer Avenue and Eighth Avenue.

The first three are owned by the Playground Commission; the other four are rented.

Attendance for the year 1912:

Oliver Street Playground.....	67,779
South Canal Street Playground.....	162,989
Prince Street Playground.....	314,330
Newton Street Playground.....	183,127
Lafayette Street Playground.....	74,200
*Belleville Avenue Playground.....	.....
*Summer Avenue Playground.....	.....

802,425

*Opened in 1913.

Grounds and Buildings

The general condition of the grounds has been somewhat improved during the last season; but further improvement is still needed. Three City Playgrounds are equipped with electric lights and are kept open until 9:30 every evening except Sunday.

There are Recreation Houses on Newton Street and Prince Street grounds. They are not well adapted for their use, as they were formerly dwellings, and were never intended for Recreation Houses. There have been no funds available to put these houses in order, consequently they are in a very run down condition and poorly

equipped for recreation purposes. On Lafayette Street and Belleville Avenue Playgrounds small portable houses are used, giving a room 20 feet by 40 feet, in which games are played, folk dances taught, and entertainments given from time to time by the children. These houses are well suited for use on rented property, where it would be unwise to build permanent structures.

The Commission is experimenting with portable comfort stations, which have been greatly needed. Both portable recreation houses and comfort stations are of sheet steel.

New apparatus has been installed on all grounds this season, consisting of swings, slides, giant strides, gymnasium apparatus, and equipment for basketball, volleyball, etc.

Recreation Buildings

Recreation buildings similar to those in Boston are strongly urged. They combine a gymnasium, which may be used as a public hall, a swimming pool, game room, reading room and administration offices. They should be built in or near playgrounds, though where this is impossible, they may well stand by themselves. Even the smallest playgrounds should have, at least, a small recreation building near by.

Public Baths

This year the public baths were placed under the control of the Playground Commission. They have been made as attractive as possible. The attendance has been very satisfactory, showing high appreciation of public bathing facilities.

There are four public baths:

No. 1—Summer Avenue, near Eighth Avenue.

No. 2—Morris Avenue, between South Orange and Fourteenth Avenues.

No. 3—Walnut Street, near Van Buren Street.

No. 4—Montgomery and Charlton Streets. (Opened September 3, 1913.)

The three old baths are of the swimming pool type, but the pools were not constructed properly and are closed, it being impossible to keep them in a sanitary condition. They are used as shower baths only. The Commission may use the pool spaces in the old buildings for small gymnasiums or more shower baths, or may install a filtration plant and so reconstruct the unused pools as to make them sanitary.

The swimming pool type of public baths is decidedly the most popular. If properly constructed and carefully managed, the possibility of contagion is reduced to a minimum, and in view of the great advantages of a swimming pool, this type of public bath seems easily the best.

Shower baths are always installed with a swimming pool.

Swimming should be taught to every child, and regular instruction in it should be given to all school children. A report from one of the largest schools in the city shows that out of an enrollment of 247 boys, there are only 87 who can swim, and out of an enrollment of 275 girls, there are only 15 who can swim. Swimming pools, then, give opportunities for a means for wholesome exercise, promote cleanliness and give training in an almost essential art. Exhibitions and contests from time to time arouse interest and provide enjoyment for the entire community. Many who would not otherwise patronize public baths form habits of cleanliness through the attractiveness of swimming pools.

A Department of Municipal Recreation

From the above data it is evident that Newark is peculiarly fortunate in the number and extent of its playground facilities. It will be seen that the administration

is divided among three separate bodies, and while such sub-division is necessary at present, it would seem that certain features could well be assembled under one body. This body would be known as a Department of Municipal Recreation.

New Playgrounds

In the past little thought has been given to saving play spaces as the city developed, and consequently it is now necessary to open them at high cost in thickly populated districts. Many dilapidated buildings, stables and sheds ought to give way to small attractive recreation centers.

Such centers should be scattered throughout the congested sections of the city. They form city safety-valves and are far better investments than jails and houses of correction. When new districts are being developed, the city should set aside land for playgrounds. They should be planned for in the Vailsburg section, for instance, and in the south and east parts of the city. Many fine plots are now available in sections which will be entirely built up in a few years.

One or more should be established in the Fourteenth Ward. The playground opposite Morton Street School should be enlarged to take in the entire half block. The property on South Orange Avenue, near South Twelfth Street, should be carefully considered for a future playground. Belleville Avenue Playground, now rented, should be purchased, as should also the Lafayette Street and N. J. R. R. Avenue properties.

CHAPTER IX.

REVIEW OF THE COMMISSION'S WORK

Appointment

Under authority of the act of March 30, 1911, enabling cities of the first class to appoint City Plan Commissions, on June 1, 1911, Mayor Haussling appointed the following citizens as members of the Newark City Plan Commission to serve for a term of one year:

FREDERIC BIGELOW	JOHN COTTON DANA
CHRISTIAN W. FEIGENSPAN	DAVID GROTTA
FREDERICK J. KEER	JOHN H. KEHOE
AUSTEN H. MCGREGOR	SAMUEL E. ROBERTSON
GUSTAVUS STAEHLIN	

Organization

Shortly thereafter the Commission met and organized; Commissioner Grotta being elected President, Commissioner McGregor, Vice-President, Commissioner Robertson, Treasurer. Mr. Newton H. Porter was engaged as Temporary Secretary.

Enabling Act

On July 28, 1911, the first report was issued containing the text of the enabling act and the suggestions of a Committee on Organization.

Secretary

On February 13, 1912, Mr. Bigelow resigned as a Commissioner, and on February 29, 1912, was engaged as permanent Secretary.

Experts

On March 8, 1912, the services of Mr. George B. Ford and Mr. Ernest P. Goodrich, both of New York, were engaged as experts.

On May 15, 1912, Mr. Bigelow resigned as Secretary.

Preliminary Report

On June 1, 1912, the experts issued their first report to the Commission. This report was in the nature of an outline, describing the fields which the experts proposed to study, and the problems to be met, together with a detailed description of work done to date and the lines along which studies were being made. This report included a list of maps already made or under way, consideration of certain street openings and widenings and brief statements on canal, market, and trolley questions.

Appointment

On June 1, 1912, Mayor Haussling appointed the following citizens as members of the City Plan Commission for a term of one year:

DAVID GROTTA	AUSTEN H. MCGREGOR
SAMUEL E. ROBERTSON	JOHN COTTON DANA
CHRISTIAN W. FEIGENSPAN	FREDERICK J. KEER
JOSEPH M. BYRNE	GUSTAVUS STAEBLIN
RICHARD STOCKTON	

The organization of the Commission remained the same, save that Mr. Robert L. Ross was engaged as Secretary.

Market Report

On September 3, 1912, the Commission forwarded to the Mayor and Common Council the report of its experts on the Market Problem. The recommendations, etc., therein made will be found in Chapter V. of this report.

Traffic Report

On November 6, 1912, a report on traffic conditions was submitted to the Commission by the experts. Conditions at the intersection of Market and Broad Streets were considered in detail in a sub-report, entitled "An

Analysis of Market Street, Newark, Trolley Operations and Suggestions for Improvements and Relief," by Mr. F. Van Z. Lane. A second sub-report was upon conditions at the intersection of Broad and Bridge Streets, entitled "Suggestions for the Relief of Traffic Congestion, Immediate and Future, at the Junction of Broad and Bridge Streets, Newark, New Jersey," by Mr. H. Bartholomew.

Broad Street Paving Report

On November 26, 1912, the Commission forwarded to the Mayor and Common Council the report of its experts upon the paving of Broad Street. Much difference of opinion prevailed in the city as to the kind of pavement which should be laid on Broad Street in place of its ancient granite blocks. In their report the experts gave a careful study of all pavements in common use in the large cities of this country, and stated that there are but three which are suitable for Broad Street,—sheet asphalt, wood block and granite block. Sheet asphalt was rejected for its great maintenance cost. The report then stated that wood block, properly treated and laid, and granite block, so trimmed as to leave no interstices greater than a quarter of an inch and grouted with cement, were of almost equal merit; but that in view of the fact that quietness should be given great weight in determining the type of pavement for this particular street, wood block was to be preferred. In a letter submitting this report to the Mayor, the Commission went on record in favor of granite block by a vote of 6 to 3.

Housing Report

In December, 1912, a report on housing conditions, prepared by Dr. James Ford, of Harvard University, was submitted to the Commission by its experts. Housing conditions in all parts of the city were described; the character of dwellings, the distribution of the foreign and native population and other data, being duly set forth.

A house-to-house survey of five selected blocks in different parts of the city was made to illustrate extremes in conditions good and bad. The report shows that Newark is notably free from lot congestion, narrow streets and alleys, surface drainage and one-room apartments. The conditions which most seriously menace Newark's welfare were found to be dark rooms, streets without sewers, garbage not well protected, land filled with garbage, and very serious fire risks. Dark rooms were shown to be conducive to the spread of tuberculosis, whether they are windowless rooms, basement rooms, or rooms lighted only by openings into shafts or into narrow alleys between buildings.

It appears that under present laws it is possible so to erect buildings as to make them serious fire risks, to construct buildings with dark rooms and other unhealthful and unsanitary conditions, to erect tenements upon streets not provided with sewers, to build factories in residential districts and to cover with buildings too large a part of lot areas. Specific recommendations were made for changes in tenement house laws, building code and sanitary code, which would help to lessen these evils.

The zone system was discussed. It was shown that it is possible to restrict unhealthy growth and to maintain the best standards in the better residential districts. Methods by which other cities are meeting housing problems were noted.

Annual Report

On December 20, 1912, the experts presented to the Commission, in the form of an annual report, a statement of subjects studied, subjects under consideration, and reports made during the year ending December 31, 1912.

Experts

On January 1, 1913, the services of Mr. Ford and Mr. Goodrich were again engaged for one year.

Diagonal Street Resolution

On January 3, 1913, a resolution was forwarded by the Commission to the Mayor and Common Council, favoring the construction of a street known as Diagonal Street, from the junction of Broad Street and Park Place to the Pennsylvania Railroad plaza on Market Street.

Supplementary Market Report

On January 29, 1913, a supplementary report on the Market question was issued, again stating that the Commission favors the construction of a wholesale market in the south end of the city. In view of a seemingly strong public sentiment in favor of the retention of a retail market, the report suggested that such a market be established with a new and proper building on the southeast corner of the present site.

On February 28, 1913, the resignation of Commissioner Robertson was forwarded to the Mayor. No successor was appointed.

City Plan Law

On March 12, 1913, a statute became effective which changed the previous City Plan law as follows: "The terms of the Commissioners were changed from one year for each member to three one-year terms, three two-year terms and three three-year terms; the number of Commissioners to remain the same unless reduced at the discretion of the Mayor."

It further provided that "All questions concerning the location and architectural design of any work of art, statue, or any other memorial within such city, shall be referred to the City Plan Commission for its consideration and report before final action is taken thereon." And that, "All plats or re-plats of any lands within the limits of such city shall be submitted to the City Plan Commission

for its recommendation before the same are approved." The limit of the annual appropriation was increased from \$10,000 to \$25,000.

The new law also automatically continued the Commission then in office until the first of January, 1914.

Sign Report

On March 28, 1913, a report of the experts was submitted to the Mayor and Common Council, suggesting changes in the ordinance regulating the construction and maintenance of projecting street signs and roof signs.

Jurisdiction of sign construction is now vested in both the Building Department and the Board of Street and Water Commissioners. The report of this Commission suggested changes in the City Ordinances and Building Code whereby jurisdiction would be centralized.

A model ordinance amendment was suggested which would regulate projecting street signs in the following manner:

All signs to be constructed perpendicular to the building to which attached.

No sign over one foot thick.

No sign should be less than ten feet above sidewalk.

Signs from ten to twenty feet above sidewalk not to project over four feet.

Signs from twenty to forty feet above sidewalk not to project over eight feet.

Signs over forty feet above sidewalk not to project over four feet.

No sign to project over curb line.

No sign to exceed the height of building.

No sign to project beyond lines drawn in a horizontal plane at an angle of 45 degrees, with the building line from the line of juncture of the building line with the side lot lines.

No signs to interfere with fire escapes or show windows.

No sign to be so constructed as to be in danger of falling.

All signs to be of non-combustible material.

With regard to roof signs:

No sign to be over forty feet above top of building.

All signs to be of metal.

No sign to exceed 1,600 square feet.

All signs between 500 and 1,000 feet square to present a surface of not over 50% subject to wind pressure.

All signs over 1,000 feet square to present a surface of not over 30% subject to wind pressure.

On May 1, 1913, the request of Mr. George B. Ford, Expert, for a leave of absence of about six months was granted.

Farmers' Market Resolution

On May 13, 1913, a resolution was forwarded to the Mayor, protesting against the action of the Common Council in authorizing the purchase of a site for a farmers' market on Mulberry Street, immediately south of the Central Railroad of New Jersey.

Nye Tract

On May 13, 1913, a report was forwarded to the Mayor and the Board of Works, regarding the proposed opening of a large tract in the southwestern portion of the city, known as the Nye Estate. This was the first improvement of its kind submitted to the City Plan Commission under the new law.

Trolley Transportation Report

On June 19, 1913, a report on trolley transportation was forwarded to the Mayor and Board of Works, a description of which is given in Chapter VI. of this report.

Romaine Place

On June 19, 1913, a report was issued concerning the opening of a street known as Romaine Place.

Sandford Avenue Heights

On July 1, 1913, a report was issued concerning the opening of a street layout to be known as Sandford Avenue Heights, number 1.

Oakland Terrace

On July 1, 1913, a report was issued concerning the opening of a street to be known as Oakland Terrace.

Meadow Report

On November 26, 1913, a report on the meadows by Expert Goodrich was issued, a digest of which is contained in Chapter IV. of the present report.

Asylum Tract

On December 9, 1913, a report was issued concerning the opening of a tract of land formerly occupied by the Essex County Hospital.

City Planning for Newark Report

On December 31, 1913, a report was issued, entitled "City Planning for Newark."

Reports Issued by the City Plan Commission

1. Enabling Act. Printed—15 pages.
2. Preliminary Report. Printed—24 pages.
3. Market Report. Printed—15 pages.
4. Broad Street Paving. Printed—10 pages.
5. Housing Report. Printed—75 pages, 3 maps, 20 illustrations.
6. Annual Report (1912). Printed—9 pages.
7. Traffic Report. 26 pages.

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8. Report on Opening of Diagonal Street. 4 pages.
 9. Report on Signs. 4 pages.
 10. Farmers' Market Resolution. 1 page.
 11. Report on Opening of Nye Tract. 2 pages.
 12. Trolley Transportation. 107 pages, 9 illustrations, 133 charts, 16 tables.
 13. Report on Opening of Romaine Place. 1 page.
 14. Report on Opening of Sandford Avenue Heights, No. 1. 2 pages.
 15. Report on Opening of Oakland Terrace. 1 page.
 16. Meadow Report. 41 pages.
 17. Essex County Hospital Tract. 1 page.
 18. City Planning for Newark, N. J. Printed—200 pages, 45 illustrations.

CHAPTER X.

FUTURE WORK OF THE COMMISSION

The work of this Commission, as presented in this and other reports, covers many phases of city planning, and is distinctly constructive. The community can well afford to give careful attention to its proposals for betterment.

Perhaps the most urgent matters have now been examined and discussed, but many others of importance should be considered if the Commission is to furnish a comprehensive plan for the whole city. Such a plan should be prepared, including all the many phases of the subject, and so setting forth their interrelations that an adjustment between the several parts can well be made. The report in hand, though it summarizes the work of three years only, shows clearly what such a complete city plan for Newark would be like. Were a complete study of the city once made, it would disclose plainly the relative urgency of each problem, so that all could be taken up in their proper order and available money apportioned to best advantage. Such a comprehensive plan would also present to the citizens an ideal for which to strive, and would inspire civic pride, and would arouse support for securing results.

Among the subjects not yet touched upon or which should be treated more in detail are the following:

Water Front

The water front has been considered only in connection with meadow development. Plans for developing the whole water front should be worked out in detail, pointing to the most economic use of this very valuable property; these plans should include taking certain portions of the water front into the park and parkway systems.

Railroads

The best location of existing or new railroad stations, the relocation of tracks for relieving street congestion, opening up new neighborhoods to residence use and providing less unsightly railroad bridges across principal streets, should all be subjects of consideration. Attention should be given to the handling of freight from a business standpoint, with freight yards so located as to serve best those who use them. This would call for much careful investigation for efficiency and would mean locating railways, stations, approaches and freight yards on the comprehensive plan.

Streets

Urgent street problems have already been presented, but in the outlying districts are many crucial ones still unsolved, and still others will appear in the many new areas in which streets are yet to be laid out. It is very desirable that future streets be so located now as to harmonize with a general plan of development.

Street Fittings

Little attention has been paid to the design, location and arrangement of trolley poles, electric light poles, street name signs, fire alarm boxes, watering troughs, public comfort stations, etc. While these matters are not as urgent as some others already considered, they have a great deal to do with the appearance of the city and the impression it gives to strangers. This Commission could well make a study of this general subject and offer suggestions to those who have them in charge.

Sub-Structures

No attention has been paid to sub-structures, or the possibility of grouping them in pipe tunnels to prevent continual tearing up of streets for repair work. Such

sub-structures should be considered in detail with reference to the work now being done and about to be done by city departments and by private corporations, and provision made therefor.

Rapid Transit

The transit problem has been well worked out in the reports already submitted. More attention could be given, however, to the question of rapid transit in relation to the developing of new sections of the community, particularly industrial regions. This implies proper provision for transit between residential sections and places like the meadow district. Such rapid transit schemes should be incorporated in the comprehensive plan.

Industrial Districts

Attention has been given to laying out industrial districts in connection with the water front development. This should be carried further and plans set forth in detail, so that lot and block units and street arrangements may fit into one another and into the general plan of the city. Meadow development will be slow and will be mainly carried out by private interests as the need arises; but however slow and fragmentary it may be, it should all conform to a carefully considered general plan. Other portions of the city, particularly adapted to industrial use, should be plotted in the same way and incorporated in the comprehensive plan.

Market System

Market plans, with particular reference to a wholesale terminal market, have been presented. A terminal market and several municipal retail markets distributed throughout the city should be considered in detail and reported upon.

Housing

The housing report, submitted in December, 1912, covers the ground quite thoroughly. Suggestions were made in it for replanning unsanitary areas, and for making plans of model housing areas in outlying undeveloped sections. The items should be incorporated in the comprehensive plan. Recommendations for changes in housing legislation and administration should be pushed to an end.

Recreation

Recreation has been studied in much detail, but no report has yet been submitted. The data gathered should be assembled, findings and conclusions tabulated and made public. Plans should be made and included in the comprehensive plan showing ideal locations, sizes and kinds of necessary and desirable playgrounds. Special studies should be made of the designs of these playgrounds, adapting them to those parts of the community which they are to serve, and connecting them all with the school recreational system.

Available plots, near ideal locations of playgrounds, should be examined to learn if they can be used in the place of ideal plots, and if so, how much they would cost in each instance. The general scheme of playground development should fit into the comprehensive plan as a whole; and an order of urgency be determined, that lands may be acquired and playgrounds developed where most needed.

Parks and Parkways

Newark is particularly fortunate in the number, area and design of its parks. But certain sections of the city are still not served by parks and no adequate parkway connects existing parks. This point should be carefully considered and reported on.

Present street planting is good, thanks to the amount and quality of the work of the Shade Tree Commission. Improvements could be made in the use of grass borders, shrubbery and flowers in streets and in smaller parks. The comprehensive plan would include these items, worked out in detail, with the aid of the Shade Tree Commission.

Civic Structures

Many good suggestions have been made for the location and design of civic structures. However, no general plan for grouping civic structures has been presented, and this should be done, bearing always in mind provisions for new buildings. Several central sites, like those by the Public Library, the City Hall, the Court House, and the Pennsylvania station, should be considered in detail, after the manner of the studies offered in this report. Let the city hold competitions among architects for designs for groups of buildings at these and other points. Around certain public squares and parks much could be done to control the architecture of buildings facing such squares and parks. These matters should be worked out in detail and included in the comprehensive plan.

Restrictions

Billboards and street advertising signs formed the subject of a report, now under consideration by the city authorities. This should receive further attention and proper results be obtained.

The limitation of the heights and areas of buildings should soon be taken up, treated in detail, and ordinances or laws formulated. Other cities have seriously considered this subject and Newark could profit by their experience.

The districting of buildings should be considered, that factories may be excluded from certain residential districts, as has been done in other cities.

Paying for Improvements.

Study should be made of the comparative value of methods of paying for improvements now in vogue in Newark and other cities. Reference is made particularly to assessing costs of improvements on abutters, to excess condemnation, and to the unearned increment tax. The advantages, and disadvantages, of municipal ownership of public utilities should be presented.

Publicity Campaign

The Commission is now possessed of a great mass of interesting and valuable information. To secure results along the lines suggested above, and others not here mentioned, this information should be brought again and again to the attention of the whole citizen public, plainly and briefly. A publicity campaign should be persistently carried on to bring out this information, together with the findings of this Commission.

Conclusion

The foregoing statement presents many matters as yet unfinished. All are important and all are essential parts of a complete, well-rounded plan.

It is very desirable that all be fully considered and duly incorporated in one comprehensive scheme for the whole community. Only thus will overlapping and interference be avoided. And only thus will the relative value and urgency of each be clearly seen.

Such a comprehensive plan will not only prove a great source of inspiration and civic pride, but will also have a marked value in advertising the city by convincing the outside business man that Newark is a live and progressive community, and a good place in which to locate his business.

Such a comprehensive plan will show that money here spent on improvements is used to the best advantage and that the city is getting full value therefor.

We repeat some of the suggestions given in Report No. 1:

"This Commission should get in touch with all the city departments and especially those that may in any way come in contact with, or be affected by, any suggestions and plans that this Commission may set forth. This Commission should early secure statements from them about the developments and changes they have in mind that may touch upon projects that this Commission may consider.

We are confident that all the departments of the city will look upon this Commission as an agency well adapted to bring together the facts of Newark's municipal life, to look at those facts without prejudice, and to draw from them reasonable and helpful recommendations to be submitted for approval to our fellow-citizens. If this Commission is, as we believe, thus looked upon by the city at large and by all its departments, we may be sure that any reasonable request for figures, plans, statistics, suggestions and criticisms will be cheerfully granted."

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